DOCUMENT RESUME

ED 135 457 PS 009 056

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|---|---|
| AUTHOR | Harnischfeger, Annegret; And Others |
| TITLE | Early Childhood Socialization and Social Class Environment. |
| INSTITUTION | Central Midwestern Regional Educational Lab., Inc., St. Louis, Mo. |
| SPONS AGENCY | National Inst. of Education (DHEW), Washington, D.C. |
| PUB DATE | Nov 75 |
| CONTRACT | NIE-C-74-0032 |
| NOTE | 144p.; Pages 103 through 113 of the original document are copyrighted and therefore not available. They are not included in the pagination. Filmed from best available copy |
| EDRS PRICE | MF-$0.83 HC-$7.35 Plus Postage. |
| DESCRIPTORS | Academic Achievement; Caucasians; Changing Attitudes; Child Rearing; Discipline; *Early Childhood Education; Family Environment; *Family Influence; Family Status; Longitudinal Studies; Negroes; Occupations; Parent Attitudes; Preschool Children; Racial Differences; Sex Role; *Social Class; *Socialization; *Social Status; *Socioeconomic Influences; Socioeconomic Status; Tables (Data); Working Women |
| IDENTIFIERS | Saint Louis Baby Study |

ABSTRACT

This report of family social class influences on children's characteristics is based on data from a longitudinal study of more than 1,000 children, black and white, of various social backgrounds. The sample was originally selected for another study (the St. Louis Baby Study) giving only secondary consideration to social factors. It includes a large number of lower-class black families and is not considered to be representative of the general American urban population. Data were collected from the mother, as general family informant and personal respondent, and from the child. Data on child and family cover the period from birth through the first year of school. Child characteristics include physical characteristics, scores on developmental measures, and scores on the Peabody Picture Vocabulary Test. Family factors include: family income, parental authority and role, number of siblings and size of household, paternal stability, maternal employment and age, parental education, and housing. Changes in maternal attitudes are also examined. The report differentiates between social class (its primary concern) and social status, attempting to keep parental occupational level, education and source of income conceptually distinct. The bulk of the volume consists of charts, tables and other background materials. Appendices include materials from an earlier report dealing with social class configurations of early childhood socialization. (BF)

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ED135457

# Early Childhood Socialization and Social Class Environment

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CEMREL, Inc.

A final report prepared for the National Institute of Education of the Family Influences on Children's Characteristics project (NIE - C-74-0032).

November, 1975

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The data, on which this report is based, were collected as a part of the St. Louis Baby Study. This Study, designed by Dr. Thomas E. Jordan and conducted by him and by Dr. Steven D. Spaner of the University of Missouri, St. Louis, is unique in its timing of longitudinal data collection, variety of instrumentation, and size and diversity of its urban sample. Most of the tabulations and analyses reported here would not have been possible with any other existing data. We are most grateful for their comments and support as well as for access to these data.

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Acknowledgements

In addition to vital support and data access provided by Drs. Thomas E. Jordan and Steven D. Spaner as acknowledged on the title page, we greatly appreciate the permission given by Dr. Claire B. Ernhart for use of the AFI data.

We also must express our deep gratitude to Raymond E. Pifer and Norma J. Sutton without whose energetic and exacting efforts at textual production and refinement and at table and manuscript preparation, this report would not have been as speedily and comprehensibly completed.

## 1. Fragmentation in Social Science: Substantive and Methodological

Research on early childhood socialization can only stride forward if it overcomes paramount obstacles. A prime source of many deficiencies is the disparaty among the social sciences which contribute to the study of socialization. Each has focussed on specific aspects of socialization, fragmenting both theory and method. For example, psychological and psychoanalytic workers have concentrated on the "content" of socialization as reflected in the interaction of the child with his environment or on the meaning of his experiences. Socialization then signifies changes in the internal organization of the child's psyche. Sociologists have been concerned with family structure and social stratification as configurations providing socializing contexts. Anthropologists have focussed on cultural differences as imposing different meaning systems on the acts which constitute socializing events. Economists have emphasized the economic environment surrounding the family as an important determinant of their decisions and behaviors. Educative analysts have directed their attention toward child rearing practices as fundamental educative foci. These differences in disciplinary orientation have splintered the focal issues in socialization research. Even without the atomization inherent in "disciplinary" research, the structural interconnections among key concepts characterizing socialization processes are sufficiently difficult to formulate.

These differences in focus lead to conceptual inclarity and vagueness in the use of common terms. For example, the concept of social class or level, as used by a psychologist, tends to mean differences in parental characteristics (authoritarianism, punitiveness, etc.) which are presumed to create differences in socialization outcome. Sociologists refer to family characteristics such as income, father's occupation, and parental education as defining the social level of the family and as determinative of socialization processes. Anthropologists concentrate on cultural perception of kinship patterns and their differences among social entities, emphasizing for example the difference in the role of the father within lower and middle class families. Economists highlight the economic contexts (demand for skilled labor, consumption patterns, ect.) within which families of different social level live.

Disciplinary separation creates additional barriers to the understanding of socialization processes. Key socialization concepts are centered in different social sciences. Interrelations among them span disciplinary boundaries and thus are only rarely studies. For example, aggression, as an important psychological concept in understanding socialization processes, the family's understanding of the father as a key member in the kinship system, an important anthropological concept, and father's occupation as an important aspect of the family's social standing, all are interrelated and influence the child's development of autonomy. Questions about these disparate influence processes are almost never asked in socialization research.

Other problems arise from the traditional separation of methodological and substantive research in the social sciences. There is a basic problem of detachment of method from substance in the social sciences. This need not be extreme, however, as examples can be found in all social science fields of research incorporating excellence of both types. What does occur is that methodologists in the respective disciplines tend to separate from other scholars and those disciplines and communicate much more extensively among themselves than with others. This results in the creation of new methodologies which are far from the crucial substantive problems of the discipline and in substantive work which is inadequate according to available methodology. A new methodological development which is substantively relevant may take an extraordinarily long time to significantly affect substantive research practice. This creates two major problems: (1) The increasing substantive irrelevance of much methodological work, and (2) the extremely large time lag between development of new tools and their application. A new trend in social science methodology is the increasing integration of method across social science disciplines.

The methodological problems in the social sciences have become progressively similar. For example, structural equation systems have become a ruberic for organizing large parts of the methodologies used in psychology, sociology, economics, and political science (Goldberger & Ducan, 1973). Problems in the analysis of longitudinal or panel data, problems in data quality (especially

measurement error), problems in the adequacy of standard data-analytic tools (which have led to new developments in the assessment of even very simple notions such as central tendency), and the growing concern for the measurement of institutional and social as opposed to individual change (which has broadened the relevancy of demographic methodological concepts); all of these have produced a welter of tools most of which are new to individual social science disciplines.

The combination of methodological isolation and the increase in the number of substantively relevant methodological tools, available to individual social science disciplines, cries out for an integration -- both across disciplines and across the methodological substantive chasms within disciplines. Substantive and method need to be fundamentally intertwined if method is to escape sterility and if substance is to solve problems adequately.

## 2. Methodological Strategies in Early Childhood Socialization

Current available statistical models and data analysis techniques for substantive problems in research on early childhood tend to focus on the analysis of longitudinal data. These models usually have two undesirable features. One of these results from the fact that the models are constructed so as to be general enough to apply to as many of the broad variety of substantive issues as possible. As a consequence, they tend to be focussed in a way which makes them difficult to apply in concrete research settings. Also, statisticians and psychometricians who produce these methodological developments tend to publish them in technical journals for which substantive workers typically do not have sufficient mathematical preparation and in which they have little interest. The great need for illustrative and expository presentations of actual applications is not met. Substantive investigators, therefore, would have to engage in an extraordinary effort if they want to learn to apply these models in their own research.

The other undesirable feature of these models is that they do not take into account the rather substantial measurement errors which are common in educational and psychological data (Cronbach & Furby, 1970; Wiley & Hornik, 1973).

If one is attempting to assess the influence of several variables on some aspects of the socialization process, measurement errors in the variables thought to reflect the process will make standard methods of assessing such influences misleading. For example, if the extensiveness of a particular socialization experience and the child's initial status on the variable to be explained are measured with error, but if the initial status is more poorly measured than the socialization experience, then the estimated effect of the socialization experience will be inflated. This is true even if the socialization experience has no effect. This example points up the importance of assessing the impact of measurement error when longitudinal data are analyzed.

A primary problem in studies of socialization is to discover the impacts of events in the child's environment and the impact of interactions with persons and objects on the development of later characteristics. Two of the major methodologies for investigating the impacts of these occurrences, when socialization outcomes are measured, have been the longitudinal study and the cross-sectional retrospective study.

In the first, longitudinal information is collected on usually a small number of children over an extensive period of time. These time periods may last from a few months to even forty years as in the classic example of Terman's Study of Gifted Children (Oden, 1968) or the Berkeley Growth Study (Block, 1971), both also being examples of studies involving large numbers of children. The measurment intervals usually vary from daily to weekly to ten years gaps, the close spacing being chosen for the first months of infancy. Sometimes the spacing of the observations on the children is coordinated with the anticipated rates of change or growth of the developing characteristics. In addition, information is sometimes collected on the general characteristics of the family (mostly the mother ) and attempts are made to relate these variables to the child's growth along important dimensions.

The other type of study is what might be called the cross-sectional retrospective study. In this type of study, children are measured with respect to their characteristics at one point in time and the parents are questioned about their general child rearing practices and attitudes, hopefully reflecting the child in his environment during the time period prior to the measurement. Sometimes, in exceptional circumstances, these two methodologies are combined. Both kinds of studies suffer from several problems which can be clarified against the background of an ideal study.

If we had infinite resources, both human and material, we would clearly conduct a very different kind of study. We would measure the child's environment and interactions every day of his life throughout his waking hours between two time points where we had extensive measurement at both the beginning and the end of the time period. We would then attempt to account for the child's characteristics at the end of that period of time in terms of his characteristics at the beginning and the intervening events and interactions. We would also attempt to account for intervening events and interactions in terms of social, cultural, economic, and psychological characteristics of the family and its members.

If we think of this as an optimal but impossible paradigm, we may evaluate usual research strategies with respect to their resemblance to the data collected under this paradigm. Conceptually, we have four general sets of variables: The child's initial characteristics, the intervening events, the family characteristics which explain them, and the resulting characteristics. If we compare this with a longitudinal study, we typically have a broad variety of characteristics at each point in time (resulting in multiple initial and final sets of characteristics) and some measurement of intervening events. In the retrospective cross-sectional study, we have data at one point in time and diffuse information relevant to events preceding that point. From our perspective, the problem does not lie in the first methodology with the initial and subsequent measurement, although measurement characteristics need to be taken into account in assessing the role of the

initial characteristics, because of the large measurement errors in most psychological assessments. The primary problem in all these studies is the rather distal character of the measurements relevant to the child's environment and interactions. Certainly, parental attitudes and family characteristics, which condition and control the parents' behaviors and interactions with the child, are primarily explanatory concepts in the socialization process. However, these influences on the child are totally mediated through behaviors and events.

The relationship between attitudes and behaviors is well known not to be a direct one. Even when measurements are made retrospectively on practices and behaviors which the parents have engaged in, the recall of such events may be more reflective of the parents' attitudes about those events than of the events themselves. Clearly, the recollections do not resemble the behaviors (Yarrow, et al., 1970; Jordan, 1967; Klemmetti & Saxen, 1967). Examples of the kinds of additional difficulties in relating family characteristics to socializing processes were sketched above.

In addition to formulating methodologies for circumstances in which all of the key substantive concepts are assessed, attention must be directed to the more common situation in which important conceptual elements have not been measured. This exacerbates the already existing problem of relating theory (concepts), model (variables), and data.

The relation between method and substance is usually seriously oversimplified in methodological writing. Typically, there is a conception of "reality" which is considered prior to and formative of observations and data. Then, there exists a distinct conception of "theory" as a way of structuring "reality". Mathematical and statistical models for the analysis of data are typically conceived as formalizations of theory. They are used to "fit" the data to the theory. Lack of fit is taken to indicate theoretical inadequacy.

Our conception is similar but more varigated. We distinguish reality from the substantive conceptualization of it as well as from its representation in data.

We do not conceive of analytic mathematical and statistical models as formalizations of these conceptualizations. Instead, we consider them as tools for relating conceptualizations to data, i.e., for reflecting conceptualizations on data, to assess their adequacy and to facilitate their revision. Consequently, lack of fit between model and data does not necessarily imply a simplistic rejection of the conceptualization. It may only reflect a necessary lack of resemblance between theory and model.

Method in general is concerned with the design of empirical investigations, the measurement of characteristics of reality, and the analysis of those measurements. In the case, we consider here, methodological issues are restricted because we are concerned with the use of preexisting data to increase our understanding of child development and socialization. Consequently, our emphasis is on measurement models and analytic models and procedures rather than on issues in the design of experimental or non-experimental investigations. Also, as the data with which we are concerned are non-experimental, we are more working with analytic issues appropriate to this category than with issues relevant to experiments.

## 3. Description of St. Louis Sample and Data Collection

The current study is based on a reanalysis of existing data from a longitudinal study of 1008 children. The original study is variously known as the St. Louis Baby Study, the Early Developmental Adversity Program, and the Longitudinal Study of Preschool Development. The Baby Study attempted "to understand the contribution of biological and social factors in the period from gestation to school entry to the presence and absence of learning problems in the elementary school" (Jordan, 1967b). The initial emphasis was on the relationship between perinatal experiences and developmental outcomes. The early findings were reported in a monograph entitled "Early Developmental Adversity and the First Two Years of Life" (Jordan, 1971).

The sample was gathered on the basis of births occurring from December 1966 through March 1967 in five St. Louis hospitals. (For a description of the hos-

pitals see Appendix A, Jordan, 1968). Since the initial focus of the study was not probably a social class configuration but on the developmental implications of events surrounding the birth of the child, the structure of the sample was determined by assessments of the adversity of birth circumstances (characteristics of pregnancy and gestation, problems of delivery, and neonatal disorders). All births were monitored by obstetric and pediatric hospital staff teams, composed by a field representative of the St. Louis Baby Study. Infants were classified according to a criterion series codified by means of the International Classification of Diseases (ICDA). Each birth which met the criteria (high risk) "together with the next case, seriatim, which did not" (Control) was selected (Jordan, 1967a). Only as a secondary dimension did social class indicators enter the sampling procedure. Therefore, the St. Louis Baby Study sample represents primarily a biological risk cohort of babies. It should be noted that when, below, we assess the representativeness of the sample, from a social class and racial perspective, that it was not intended to be so. Rather, the data were intended to be bio-socially informative, not representative. The number of births in each of the criterion groups for each hospital is given in Table 1.

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Insert Table 1 about here

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Jordan (1967a) comments that the adversity group which resulted contained many Black lower class families, but few middle and upper middle class White families. The control group contained few middle class Black families. Jordan (1968) also gives a general description of these social class differences among hospitals in the families of the infants.

Data collection was oriented toward the family as a unit. Initial information came from "concurrent diagnostic procedures" and subsequent information from interviews with the mother as a general family informant and personal respondent. Furthermore, information was gathered directly from the child.

The 1008 children were followed into their first year of schooling. The data collection was ended in 1974. Over seven years -- from 1966 to 1974 -- a great amount of information on the child, the family, and especially the child's

parents was gathered. During the first 2½ years, data on the children and family were collected every half year (Figure 1). After that, Jordan split the total sample in two and alternatively gathered data on the two groups each half year. Although Jordan was working with predominantly lower social class families, he was able to maintain nearly eighty percent of the original sample during a six-year data collection.

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Insert Figure 1 about here

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One of the virtues of the study is that Jordan did not rigidly repeat measurements, but tried to select those measurements which would most critically assess the child's development at a specific age. This procedure resulted only partly in repeated measurements. On the whole, the data represent a multifacet sample of developmental characteristics and characteristics of the child's environment. We include a list of the variables in the Appendix A.

Sample data, available to us for reanalysis, constitute only a part of the data collected by Jordan. Data on family composition, social class, and maternal characteristics are most completely represented in our data file.

The variables, availables to us at the birth of the child are:

Sex of child
Race of mother
Index of Social Status (McGuire & White, 1955)
Age of mother
Marital status of mother
Authoritarian Family Ideology (Ernhart & Loevinger, 1969)

We will report demographic characteristics of the sample, namely, race, marital status, age, and social class level. We will compare the relative frequencies of some of the characteristics to those found in the 1970 Census in order to assess the typicality and economic situation of the St. Louis sample.

In the Baby Study sample of the original 1008 births, 53 percent (533) were to White while 47 percent (474) were to Black mothers (Table 2). Among the Blacks, a third were unmarried while among the Whites only one percent had no husband.

Insert Table 2 about here

The median age for Black mothers is twenty-two while that for White mothers is twenty-six, a gap of over four years (Table A3 *). The histograms representing these distributions (Figure 2) imply a much larger frequency of births for women under twenty in the Black subpopulation than in the White.

Insert Figure 2 about here

This age difference is widely known and closely intertwined with the Blacks' and Whites' social class level. Females, under twenty-five, at the lower end of the social strata are more likely to bear children than their middle class age mates. Accordingly, in the St. Louis sample of mothers, we find considerably more young Blacks than Whites, as Blacks are generally of lower socio-economic status.

The typicality of this sample's age distributions can be assessed by a comparison of the St. Louis to the Census data. To be more specific, we not only grouped the St. Louis families according to race, but further subdivided groups according to marital status of the mother. An approximate matching comparison of these families to urban household data from the 1970 Census is possible for unmarried mothers who are heads of households and have children of their own under six years of age. The child which is the focus of our study was then (1970) three years old. Comparison with the urban Census data, from which we excluded widows and fathers without wives, shows that the unmarried mothers of the St. Louis sample are considerably younger (average age less than 25) than typical urban American mothers, married or not (mean ages 29 years)--Table 3. This finding holds for both racial groupings, although the relative preponderance of young Black over young White mothers in the St. Louis sample is even greater than that in the Census data. We, therefore, conclude that the age distribution of the unmarried mothers in the St. Louis Baby Study does not correspond to that of the general American urban population.

* Tables with the designation A are located in the Appendix.

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Insert Table 3 about here

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A comparison of married mothers faces the difficulty that we can only contrast the mothers' ages from the St. Louis sample to the Census age data for fathers (married heads of households) with children under six years of age, i.e., we can only compare St. Louis married mothers to urban married fathers. We assume that husbands are, generally, older than their wives and that this discrepancy might vary across social strata. Nevertheless, the difference between the ages of the fathers in the Census and the mothers in the St. Louis sample is considerably smaller than the difference we found in comparing Census to St. Louis unmarried mothers (Table 3). We are, therefore, confident that the St. Louis sample of married mothers corresponds more closely to that of a general urban population than the unmarried sample.

A comparison of unmarried mothers to "complete" (parents present) families shows that the St. Louis sample underrepresents the urban population of White unmarried mothers (St. Louis - 1 unmarried for every 100 married; Census - 7 unmarried for every 100 married). Contrary to that, the St. Louis Black sample overrepresents unmarried Black mothers ( St. Louis - 48 for every 100; Census - 39 for every 100). This fact and the earlier mentioned atypically high percentage of younger Black mothers indicate that the St. Louis sample of Black families strongly overrepresents the lower end of the urban social spectrum. The implications of this assessment are all the more striking if we consider the income levels of the generally higher status Census comparison group (Table A 4).

A schematic table (Table 4) showing the differences in family income for various age groupings of Black and White complete families and unmarried mothers, all in urban areas with children under six years of age, portrays great social disparities and demonstrates the miserable conditions of unmarried mothers generally, but especially Black unmarried mothers. While Blacks receive less income than Whites, and younger people less than older (excluding retired persons), families headed by unmarried mothers have monumentally less income than families in which a father is present. At the low

end of the income scale are the unmarried mothers and espetially Blacks. White thirty-five to forty-four year old married males whith children under six in urban areas receive, on the average, 208 percent more income than their female unmarried counterparts. But this White female group still receives 15 percent more than comparable Black females. In dollar terms, this means that a White complete family, with a father between 35 and 44 years of age, had in 1970 a yearly income of about $ 13,500 while a typical unmarried White mother in that age range received about $ 4,400 and her Black counterpart merely $ 3,800.

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Insert Table 4 about here

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It is also important to realize that the labor force participation for Black mothers is equally high whether they are unmarried or married with their husband present (Table A4 ). Participation ranges between 43 and 51 percent, disregarding the retired age group ( 34 and 36 %). Unmarried White mothers have even higher labor force participation (53 to 56 %). The only urban family group with children under six that has a low percentage of working mothers (25 to 29 %) is that of White complete families.

These figures imply incomparably discrepant socializing environments which become even more evident when we look at the tightly related levels of occupational status and education in the St. Louis sample. The sample reflects the generally lower occupational status of Blacks. The occupation of the head of household in which the mother lives was categorized according to a scale developed by McGuire and White (1955; see also Appendix) which is a modification of the wellknown Warner scale of social class (Warner, Meeker, & Eells, 1949). The lowest level of occupation (level 7) includes unskilled workers and "reputed lawbreakers". The highest level (level 1) consists of lawyers, physicians, top executives, and similar occupations. Managers and owners of small businesses, bank and postal clerks, would be assigned a level of "3" while foremen, bookkeepers, and sales people in department stores, for example, would be alloca-

ted to level "4". The estimated occuaptional distributions (Figure 3; Tables A1 and A2 ) illustrate that most Whites are middle class while most Blacks are at the low end of the social strata. This discrepancy between racial groups is clearly outlined by comparing the respective distributions of educational and occupational levels (Figures 4 and 3). While for Whites, we find the distributions of educational and occupational levels consistent, Blacks tend to have relatively lower occupational levels than Whites with the same amount of schooling. This discrepancy holds for all but the highest levels of education (Figure 5 ). This finding is also reported in other studies (e.g., Duncan, 1968).

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Insert Figures 3, 4, and 5 about here

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So far, we only cursorily characterized the St. Louis sample. Social class level, including education and occupation, marital status, age, and race are basic societal group characteristics. We shall later unfold and fill this skeletal structure. Social class levels, as a characterization of a defined socializing environment, will be more meaningful when we study housing conditions, mothers' education and work participation, family size, number of children, and maternal attitudes. At present, the St. Louis Black and White sample can be briefly described in the following fashion.

Black sample: The Black mothers all reside in the St. Louis metropolitan area. They bore a child during the time period between December 1966 and March 1967. Compared to typical Black urban mothers, the sample's married mothers can be considered representative while the unmarried mothers were younger, on the average. The sample also has more unmarried Black mothers than usual in similar settings. Both, the larger number of unmarried mothers and their generally lower ages, as compared to typical urban settings, imply that the St. Louis Black sample heavily overrepresents the lower end of the social strata. Black unmarried mothers are heavily represented in the lowest income groups.

White sample: As do the Blacks, the white mothers lived in the St. Louis metropolitan area and gave birth to a child in St. Louis between December 1966 and March 1967. The sample has an age distribution typical for similar urban families. However, there are slightly fewer unmarried White mothers in the sample than is usual. Their small number should not distort the representativeness of the sample.

4. Social Class under the Microscope

Our orientation toward the concepts of social status and social class is directly related to our interest in socialization. We focus on those aspects of social life which are most relevant to child rearing. Consequently, we are concerned with those focal issues which directly bear on the child's day-to-day environment. Examples of such foci, as they relate to the social life of families, are: family income, father's and mother's authority and general roles, number of siblings and size of household, maternal employment, parental education, housing. As the consequence of this emphasis, we are more interested in the economic and cultural configurations occurring within social classes than in social differences in personal or family status. The latter are built around conceptions of deference relating the ways in which individuals regard each other (Shils, 1968). These differences in deference are thought to flow from differences in current individuals characteristics such as occupation, education, and income as well as more permanent ascriptions such as race or family background.

Our conception of social class is based on a notion of qualitative differences in socialization environments. American lower class families are conceived as having diffuse kinship systems -- which make extended families influential -- traditional authority structures and divisions of family responsibility, strict sex role differentiation, family members earning wages rather than salaries in occupations without regular promotion ladders. American middle class families,

on the other hand, place great reliance on the nuclear family, base authority and responsibility on competence and expertise with only loose sex role differentiation, have family members who are salaried employees in occupations with highly graded promotion systems. Obviously, occupation and source of income signal social class, and education indicates cultural differences fundamental to specific social class family structures (see, e.g., Schneider & Smith, 1973). The three components relate in very differenct ways to social class than to social status.

When measures such as social status or class are employed in a study, measurement error is likely to occur. For a variety of reasons, some people will be misclassified - i.e., placed in an incorrect category. One way of attempting to reduce the number and degree of misclassification errors is to use more than one indicator of the variable. Fortunately, it was possible for us to do this. There were two different measures of social status - the McGuire & White Index of Social Status (taken at birth) and the Hollingshead Two Factor Index of Social Position (taken at 4 or 4½ years) - and one measure of social class - the Hollingshead Occupational Scale (taken at 3 or 3½ years). For those families whose head of the household had remained stable over the four-year period, it was possible to look across the three variables and classify an individual in the most likely category. The algorithms for doing so will be explained below.

Since we wanted to focus on social class rather than social status (that is, we were interested in keeping occupational level, education and source of income conceptually distinct), we felt the need to inquire whether or not it would be possible to decompose the McGuire & White Index of Social Status and the Hollingshead Two Factor Index of Social Position into their component parts.

The Hollingshead index was a measure intended to classify individuals according to their position in society by additively combining ratings of

occupational level and education, each with distinct weights, into an overall score. In this study, the components were measured approximately four years after the birth of the child. Only the summary index was recorded in machine readable form. Table 5 presents the possible scores the index can take and the weights used to construct them. As can be seen, the decomposition is easily achieved since each combination yields a unique score. A complete description of the component scores can be found either in Hollingshead (1957) or in the Appendix A.

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Insert Table 5 about here

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The McGuire and White (1955) Index of Social Status was intended to approximate differences in the social level of families by additively combining ratings of occupational level, source of income, and education, each with distinct weights, into an overall score. In the St. Louis Family Study, data were collected, at the time of the child's birth, on each of the components of the index. These were then combined and only the summary index was recorded in machine readable form.[1]

Table 6 presents the possible scores for this index and the weights associated with each of the components. There is more of a problem with this decomposition, but it is still feasible because the weights used to combine the components are widely enough spaced to create almost unique scores for every combination. In those few cases where there is more than one pattern corresponding to a score, one of the patterns is always more likely than the others. This enables us to retrieve with great accuracy, the component levels from the total scale score.

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Insert Table 6 about here

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1 We would urge investigators to always record the most detailed information in machine readable form, so as to facilitate and economize analyses based on new conceptions or changes in operational definitions.

The Appendix ( A) contains an explanation of the typical meanings of the component scores for occupational level and education, the two variables which will concern us.

As a result of the decomposition, we will often have three similar measures of occupational level for each individual. Of course, because of survey attrition, this will not always be the case. Sometimes we will only have two measures; more rarely, only one. The algorithm for assigning occupational level scores to each is presented in Table 7. While the Hollingshead indices are directly comparable - a certain occupation will always be classified in the same way on both scales - they are not directly comparable with the McGuire and White measure, e.g., the owner of a business valued at $4,000 would be classified in level 4 of the Hollingshead but in level 5 of the McGuire and White. Since there were also a number of different combinations found in the data, we created more categories (14) than either of the component scales and assigned each case to one of these 14 levels. After this had been accomplished, we then tried to determine the meanings each of the 14 levels would have in terms of a traditional classification by social class. While we feel that the amount and degree of measurement error which occurred was reduced by this process, we still have misclassified individuals. But we feel that misclassification to have been more a result of our decision as to what constituted a middle or lower class occupation, for instance, than of measurement error .

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Insert Table 7 about here

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For this investigation we then dichotomized the social class scale into upper and lower levels (middle and lower class). By doing this, we gave up some differentiation to gain more generalizable results on the basis of a large sample size. However, we assume that with respect to the variables under investigation these differences would not be critical - e.g., middle and upper-middle class whites would have similar enough socializing environments to be considered together.

In deciding on the breaking point, we found some ambiguity at the boundaries. It seemed clear that levels 1-8 belonged in the middle class and levels 10-14 in the lower class, but where 9 belonged was uncertain. The decision to place it in the middle class was reached by looking at its neighboring categories and trying to decide with which one it had more in common. It seemed to have more in common with level 8 than with level 10 - for instance, the Hollingshead category 5 can contain a skilled craftsman such as a carpenter and this seemed to be closer to an occupation such as a bank clerk or an electrician than to a semi-skilled laborer.

We will now describe the four subgroups which result when we apply this measure of social class to the Black and White groups of the St. Louis sample. We will compare these four groups along seven variables - the stability of the father, maternal education, paternal education, maternal employment, the birth order of the child, whether there were any new siblings born after him, and maternal age.

Approximately 9 percent (N=88) of the sample of 1008 could not be classified in this way because of insufficient data or because the three occupational levels were so discrepant that the algorithms would not apply. Of the remaining 920 cases, 51 percent fell into the lower class. This percentage can be accounted for by race - 73 percent of the lower class were Blacks. The reverse is true for the middle class - 78 percent of the middle class were white. Table 8 presents the breakdown of the sample by race and social class.

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Insert Table 8 about here

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Transferring our attention to family characteristics more central to socialization, a decidely crucial issue is the presence or absence of a father figure. Psychoanalytic and psychological literature unanimously point to the importance of a complete family for a child. We do not intend to summarize the likely consequences of fatherless families for children, but agree that the consequences would be negative.

Because of the longitudinal nature of our data we have the opportunity of asking more than "was the woman married when the child was born?" We can answer the question of whether there was a stable father figure over the first four years of the child's life. To do this for each case, we looked at four variables - the marital status of the woman at the birth of the child (wed or not), the father figure at 3 years (father/other/none), the father figure at 4 years (biological father/stepfather/other), and the head of the house at 4 years(father/mother/other).

After looking over the possibilities we settled on what we believe are three large and meaningful categories - those in which the father figure remained stable over the first four years (stable), cases in which the mother appeared to be the head of the house, and those which had a clear change in the male figure during this period of time. These last two categories are grouped together for this analysis as "unstable" families. Table 9 presents the algorithm for producing this classification.

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Insert Table 9 about here

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There are considerable differences in our groupings along this dimension. Only 32 percent of the lower class Black families have had stable father figures over this time period versus 53 percent of the middle class Black families. The white lower class had proportionately about 1½ times (78 percent) as many remaining stable as the Black middle class and almost 2½ times as many as the Black lower class, while the white middle class had 9 out of every 10 (91 percent) families remaining stable (Table 10).

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Insert Table 10 about here

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We will now look at parental education, another presumably important characteristic of the child's socializing environment.

There was no measure of father's education, per se, on the file, but as a result of the decomposition of the social status indices which was described above, we were able to obtain such a measure. The assignment of meanings to the levels we obtained was much simpler here than for social class because the component scores can be made to correspond with only minor ambiguity, to years of schooling. The algorithm used is presented in Table 11.

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Insert Table 11 about here

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We compressed these educational levels into three categories - those who did not complete high school, those with a high school diploma and those who have some education beyond high school. We assumed that these distinctions would be the critical ones with respect to the socializing environment of the home.

We find that almost two-thirds (62 percent) of the Black lower class fathers dropped out of high school while about half (52 percent) of their white counterparts did. Only slightly fewer Black middle class fathers did not finish high school (46 percent dropped out) while a full 85 percent of the white middle class fathers graduated from high school. Furthermore, about twice as many white middle class as Black middle class fathers have received some education beyond high school (64 percent versus 31 percent) (Table 12).

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Insert Table 12 about here

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For maternal education the findings are very similar. 61 percent of the Black lower class mothers versus 43 percent for the white lower class mothers dropped out of high school. Again, we find that Black middle class mothers were almost as likely to drop out (39 percent) as white lower class mothers, while only 14 percent of the white middle did not finish high school. And, like the fathers, about twice as many white as Black middle class mothers have some education beyond high school (40 percent versus 21 percent) (Table 13. These facts would indicate the educative disadvantage of children born

to lower class parents and to Blacks relative to their white counterparts.

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Insert Table 13 about here

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Social class also influenced maternal employment. We considered this variable to be important because how much the mother works influences the amount of time (and energy) which the mother will have for her child(ren). Table 14 presents the results. Black mothers, regardless of class, work full time at a higher rate than either white group. Nearly half (47 percent) of the Black lower class mothers and 41 percent of the Black middle class mothers work fulltime. A little less than a third (30 percent) of the white lower class mothers work full time and only 14 percent of the white middle class mothers are employed full time. Only the white mothers worked part time, with the white middle class mothers working part time the most (11 percent versus 7 percent for the white lower class). Many Black mothers clearly spend a good deal of time away from their very young children.

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Insert Table 14 about here

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Another influential force in socialization is the presence of other children, such as siblings and playmates, in the child's environment. Siblings can strongly influence the family context within which other socializing forces operate, especially with regard to the amounts of attention which parents can devote to specific children. Table 15 shows that all of the median family sizes are high with respect to the national medians for either race in 1972 (Black = 1.72, white = 1.48). The Black lower class families are the largest with median of 2.4, then come the white lower (median = 2.2), white middle (2.1), and then Black middle class families. The big difference between the two Black subgroups is with regard to the smallest and largest family sizes. The Black middle class have a larger percentage of one-child families (7 percent more than Black lower class families) while the Black lower class has 10 percent more families of size 5 or greater. The white

groupings have families spread more evenly over the sizes.

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Insert Table 15 about here

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Another factor which could seriously alter the parent's expenditure of effort toward the child is the presence of a newborn infant which must be cared for. On this measure, it is clear that a Black family, regardless of social class, was much more likely to have a new sibling born into it in the first three years of the child's life - about 55 percent for Blacks versus 39 percent or 44 percent for white lower and middle class respectively (Table 16).

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Insert Table 16 about here

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The mother's age at the birth of the child again indicates the disadvantages of the socializing environment for Black children. The median age for Black mothers is about 21 (lower - 21.2, middle - 21.6) with ¼ (26 percent) of the lower class mothers and 1/5 (20 percent) of the middle class mothers being under 18 when the child was born. For the white lower and middle classes, the figures under 18 are only 9 percent and 1 percent, respectively. The white lower class median age is 23.8 and middle class is 26.4 (Table 17).

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Insert Table 17 about here

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The preceeding description gives us some confidence that the social class groupings we have chosen are effectives ones, for we have some fairly sharp contrasts of the variables considered. We will now try to paint a picture of the various social groupings.

Black lower class: These children appear to be the most disadvantaged of all.

Their mothers are often (26 percent) not even 18-years old at the time of the child's birth, i.e., still at high school age (median age = 21.2). The parents are poorly educated. More than 60 percent of fathers and mothers are high school dropouts, and the mother must spend a good deal of time away from the home - nearly every other mother (47 percent) is working full time. Moreover, only 1/3 (32 percent) of the families had a stable father figure over the first years of the child's life, but there were older siblings available to the preschool child as we can see by the median number of children (2.4). And the child could not remain the center of attention for long since 55 percent of the families had another birth before the child was 3 years old.

White lower class: These children do not appear to be as disadvantaged as their Black counterparts. The mothers are older at the birth of the child (median age = 23.8); only 9 percent were under 18. The parents are slightly better educated; 50 percent of the fathers and 43 percent of the mothers dropped out of high school. Less than 1/3 (30 percent) are working full time and more than 3/4 (78 percent) had stable father figures for the child. The typical child had about as many siblings as his Black counterpart (median children = 2.2) but was far less likely to see another child born before he was 3 (39 percent had a newborn).

Black middle class: The mothers are also young (median age = 21.6) with 1/5 (20 percent) of them less than 18 when the child was born. The parents are much better educated than the Black lower class with 21 percent of the mothers and 31 percent of the fathers receiving more than a high school education; still, more than a third dropped out of high school. And almost as many mothers as the lower class are working full time (41 percent). The families were more stable than the Black lower class but not as stable as the white lower class, with about half having a stable father figure for the first 3 years. While lower than any other group in the number of children in the family (median children = 1.8), they are still above the national average and were as likely to have another child in the first 3 years, as a lower class Black family (56 percent). Very clearly, race, aside from social class, brings with it some serious disadvantages in terms of the child's environment.

White middle class: This was clearly the most advantaged group. The mothers were older when they gave birth to the child (median age = 26.4). Only a few were high school dropouts (14 percent), a figure similar for their husbands (15 percent). Moreover, 64 percent of the fathers and 40 percent of the mothers had some education beyond high school. And the fathers stayed around; 91 percent were stable over the first 3 years. While there were many children in the families (median children = 2.2), the mother was more often at home (75 percent) than in any other grouping (only 14 percent worked full time), and she was more likely to have another child (44 percent) than the white lower class mothers but not nearly as likely as a Black mother (55 percent of Blacks).

## 5. Changes in Maternal Attitudes: Diagnosis of Social Environments

In the St. Louis Study, maternal attitudes towards various socialization-relevant issues were assessed at several time points. Our data file includes assessments of such attitudes accomplished by means of Ernhart and Loevinger's Authoritarian Family Ideology scale (1969) which is a rather extensive family-focused version of the original Authoritarian Personality scale (Adorno et al., 1950). The scale was administered to the mothers at two time points: at birth of the child (Time 1) and when the child was three (Cohort I) or three and one-half (Cohort II) years of age (Time 2). (See Figure 1).

We subdivided the AFI scale into small subscales of high homogeneity which focus on specific issues in child rearing (See, Appendix).
Our intent is to analyze maternal attitudes in as much detail as possible and to follow possible changes over time.

The subscales are:

- Respect: This is a three-item scale measuring the degree to which a mother believes that children are not taught enough respect for authority. The items are coded "0" or "1". The higher coding means that the mother is in agreement with the item; that she thinks children need to be taught to be more respectful towards traditional authority figures. The possible scores are 0-3.

- Intrusiveness: This is a nineteen-item scale measuring the extent to which a mother believes that it is appropriate to intervene in the child's life over a variety of content areas. The coding is the same as for the "Respect" scale. The scale is arrived at by simply adding over all the items. The result is a scale with possible scores of 0 to 19; the higher the score the more "intrusive" the mother's attitude.

- AFI: This scale contains the residual items from the original AFI scale after the preceeding two scales have been removed. It is coded in the same manner, with the higher score giving evidence of a more "authoritarian" attitude on the part of the mother. The Time I version consists of 28 items (possible score of 0-28) and the

Time 2 version has 21 items (0-21). Note that in the tables and discussion which follow "AFI" we will refer to this subscale rather than to the entire Authoritarian Ideology scale. The items for each scale are in the Appendix (p. ) and are directionally marked.

The only measure we have on the child is the Peabody Picture Vocabulary Test (Dunn, 1965). It was given to the children at about 3 and 6 years after birth. The test is rapidly administered and requires only verbal responses to pictorial vocabulary stimuli. In our use of the scores we treat the measure as an index of vocabulary knowledge rather than as an ability measure, and thus use raw scores instead of derived scores such as deviation IQ's.

As further evidence that the four groupings provide meaningful distinctions with regard to a socializing environment, Table 18-1 exhibits the means and standard deviations of each of the scales at each time point for the groups. Table 18 presents simply univariate tests on the AFI scales and the Peabody test. As can be seen all of the tests except two are significant at the .001 level. The Respect scales are at the .05 level for Time I and Time 2.

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Insert Tables 18-1 and 18 about here

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With the exception of the Respect scales, the effects are in the hypothesized direction - the white middle class mothers are lowest on the Intrusive and Residual AFI scales and their children have higher scores on the Peabody.

We have now described the variables to be used in our analysis. We were especially interested in investigating the relationships between the AFI scales at the Peabody while looking at how these would be altered by differences in stability of the family, parental education, maternal age and employment, number of siblings and the birth of any new children between Time I and Time 2. The actual analysis is described below.

In order to make this investigation, it was necessary that we have complete data on all the variables. As can be seen from Table 10 to 17, attrition

hits the subgroups differentially. The result is that the only group with a substantial number of cases with complete data was the white middle class (N = 111). The Black middle class contained only 8 such cases; the Black and white lower classes each had only 30. As a result we focused entirely on the white middle class which we will call the "analytic" group.* The general strategy will be to investigate the effects of the above variables on the AFI scales and the Peabody tests.

Before doing so we will quickly characterize the "analytic" group by comparing it to the white middle class families who did not have complete data - called the "excluded" group.

The "analytic" group is a highly advantaged group when compared to the rest of the white middle class (Table 19). The mothers are slightly older than those excluded. Less than 10 percent of either parent is a high school dropout (versus 18 percent for the excluded samply); while 46 percent of the mothers (versus 33 percent) and 67 percent of the fathers (versus 62 percent) have some education beyond high school. Strikingly, there are no unstable families in the group (versus 16 percent for the excluded). The family size is fairly similar with slightly more with 2 - 4 children (64 percent versus 47 percent). The median size is slightly higher (2.2).

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Insert Table 19 about here

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They were just as likely to have a new child before the child in the study was 3 years old. For the "analytic" group all of the factors seem to be present for providing a sound socializing environment for the child. Thus, the group may be too homogeneous to provide sensitive contrasts (Table 20).

The purpose of the analysis was to determine the extents of influence exerted on the dependent variables by the six factors of maternal employment, mother's educational level, father's educational level, additional births,

* To have additionally analyzed the other three groups would have not yielded either unambiguous or stable results as the distribution of such minute numbers of cases over a small selection of cells seriously clouds both precision and interpretation.

birth order, and mother's age at the time of the birth of the child involved in the study. Because the dependent variables were expected to be related to each other, these interrelationships were taken into account in the statistical test procedures associated with the factors. Table 21 presents the sample estimates of the intercorrelations among the dependent variables.

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Insert Tables 20 and 21 about here

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The manner by which these interdependencies were taken into account was by use of the general multivariate likelihood ratio criterion and its associated F - statistic. If the multivariate F - statistic corresponded to a p - level of less than .15, it was concluded that the factor involved in the test exerted an effect which was strong enough to merit further probing. That is, once we concluded that a multivariate effect was apparent, we tried to determine which of the dependent variables were most strongly associated with this effect. This was done by viewing the univariate F - statistic associated with each of the dependent variables where statistical significance was noted by corresponding - levels of less than .05. The overall probability of a Type - I error, for a specific hypothesis, associated with this two-stage procedure for inference of effect by any factor studies, is thus less than .15.

Because the data are such that there are disproportionate numbers of observations in the cells determined by the factor cross-classification, a special precautionary act was followed in order to provide unbiased tests of the effects of the factors. This act was to reorder terms in the analysis models so that the factor of interest appeared last.

Before the analyses which are discussed in the results section were done, we checked on the possibility of significant interactive effects among the factors. Since the factor cross-classification contains empty cells, not all interactions could be estimated. However, those which could were

grouped together and were tested against the pooled within cell variance - covariance matrix. No evidence of interaction was found; consequently, a main effects analysis model was assumed, and the residual variance - covariance matrix was used as the error estimate in succeeding analyses.

There were two basic analyses which investigated the main effects of each of the factors:

In the first analysis all eight outcome measures were regarded as dependent variables. The purpose of this analysis was to determine if there were any unconditional statistically significant effects exerted on any of the outcome measures by the factors.

The second analysis viewed the data from a time perspective. This analysis was addressed to the following question: "Assuming that the AFI sub-scale measures, taken at children's births, were equal for all groups, do the mothers and children in these groups display different scores on the measures taken at later points in time?" Answers to this question were provided by performing an analysis of covariance where the AFI sub-scale measures obtained for the mothers at the birth of their child were treated as covariates. The variables which were regarded as dependent in this case were the AFI sub-scale measures taken at Time 2 and the Peabody scores for the children which were obtained at Times 2 and 3.

These basic analyses were supplemented by others. In the cases where statistically significant effects were observed for individual dependent variables, analyses of covariance were conducted to determine if these effects were still apparent when one held constant the effects of previously occurring dependent variables.

As mentioned, the sub-scales of the AFI are positively intercorrelated (Table 21). A woman who scores highly on one of the scales is likely to score

highly on others. This is slightly accentuated at Time 2. Furthermore, a woman who scores highly at Time I is more likely to score highly at Time 2.

The Peabody tests are also moderately correlated suggesting that a child who scores highly at Time I is somewhat more likely to score highly at Time 2. However, it must be emphasized that these correlations show moderate relationships only.

The sub-scales of the AFI are only slightly (and negatively) related to the two Peabody tests.

Inspecting the multivariate tests (Table 22) for effects of the factors, we find that, when all other factors are accounted for, maternal education and family size have effects.

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Insert Table 22 about here

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Looking at the univariate tests (Tables 23-25) to discover which variables were strongly associated with this effect, we found that the intrusive and authoritarian scales at Time I were associated with maternal education and the intrusive scale at Time I and the Peabody test at Time 3 were related to the family size.

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Insert Tables 23, 24, 25 about here

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The Peabody taken when the child was 6 years old was related to the family size in an expected manner - it was negatively related to the birth order of the child - first borns scored highest and those born fifth or greater scored lowest. When the Time 2 Peabody was controlled for, the same effect resulted, although our confidence in the effect was diminished (the p level

went from .05 to .08). Interestingly, the Time 2 Peabody (taken at 3 years) did not show a significant effect and this seems to be a result of the large variance of the test at 3 years(see Table 20). It may be that the test at this young age is just not a reliable indicator of vocabulary knowledge at later years. It just may be too difficult to keep a 3-year olds' attention long enough to obtain a reliable estimate of his vocabulary.

Both the Intrusive and AFI sub-scales were negatively related to maternal education, i.e., the more highly educated the mother, the less likely it is that she would be intrusive or authoritarian in her attitudes. When we controlled for the Respect scale, we found that the effect for the intrusiveness scale increased slightly, but when we controlled for the Respect and Intrusive scales, we found the effect on the authoritarian attitude scale to diminish considerably. The implication is that a good deal of the effect of maternal education on the measure of authoritarianism is a result of the common variance the scale shares with the measure of maternal intrusiveness.

The "Intrusive" scale at Time I also was associated with the effect of family size. The effect of family size on the scale was both linear and quadratic, so we can say that up to a point, the larger the family size, the less intrusive a mother is in her attitudes. However, with families of 4 or more, the mother is more likely to score highly on the scale. It must be pointed out that this result is from a "cross-sectional" rather than longitudinal analysis, but it is one for which we have controlled for parental education, mother's age, her employment, and whether any new children were born after Time I. Our hypothesis is that the addition of children changes a woman's attitude as she soon realizes that it is not necessary (or possible) to monitor every activity of a child.

When we controlled for the initial status of the AFI sub-scales (by way of an analysis of covariance - Table 26) we found that once again the family size had an effect on the intrusiveness scale (at Time 2), although not quite as large as before. The interesting thing, however, is that the effect is linear and positive. This means that at Time 2 the larger the family, the more likely the mother was to have "intrusive" attitudes. Now,

remembering that there was a general lowering of intrusive attitudes over the three years (see the means in Table 20), this result could be achieved only if there was a considerable reduction in the intrusive attitudes for mothers with one child, some reduction for two-child families, and no reduction or a very slight one for those with larger families. Again, we should emphasize that this result occurred when all the other factors were controlled for (Table 27).

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Insert Tables 26 and 27 about here

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The implication of this finding is that our hypothesis is correct -- that having a child makes the mother more realistic about the necessity or possibility of intervening in many aspects of a child's life and thus she becomes less intrusive in her attitudes. Women with three or more children have already realized this change and so, at Time I, score more lowly on the scale. At Time 2, they score more highly, perhaps because with many children, some of whom must be up and running around, there is a need for more "intrusiveness". Unfortunately, there are three types of data, we do not have, which would help us to answer this question definitely. It would be helpful to have "intrusiveness" measures from the women well before they had any children. And it would be interesting to see if the age of the children had any effect on the intrusive attitudes of the mothers. Finally, it would be important to have measures of the same women at Time 3. Here, we would be able to see if those women who had additional children before Time 2 would have increased in their intrusive attitudes. The question we could answer would be: "Is the increase we observed in intrusiveness for women with three or more children a result of having additional children or the result of having older children who need more control?"

Essentially, there was no detectible relationship between the AFI subscales and the Peabody tests.

## 6. Summary

It appears that our social class grouping was a productive one. There were sharp contrasts among the groups on the factors of paternal stability, parental education, maternal employment and age, family size and additional births after that of the focal child. Furthermore, there were effects associated with these groups on the AFI subscales and the Peabody Picture Vocabulary Test scores.

Unfortunately, because of incomplete data, we could not investigate the relationship between the six factors representing parental and family characteristics and the AFI subscales or the two Peabody testings, for all race-social class groups. As a result, our "analytic" group consisted of highly advantaged white middle class families. This restriction substantially reduced factor variation, resulting in less precise assessment of relationships than would have resulted from an unrestricted sample of identical size.

The Peabody Picture Vocabulary Test taken when the child was three years old was not influenced by any of the factors or AFI subscales, probably because it is not a reliable measure. The Peabody test when the child was six years old was linearly related to the birth order of the child in the expected direction -- first borns were more likely to score highly and fifth borns or later scored lowly. This was also not affected by control for the AFI subscales, but there was a slight diminution of effect when the earlier Peabody score entered the adjustment.

Maternal education influenced mothers' intrusive attitudes, with those better educated mothers being less "intrusive". The AFI subscale behaved similarly but much of this can be attributed to the fact that this scale seems also to index intrusiveness.

The most interesting and striking finding is that change in intrusive attitudes depends on family size. It appears that women begin marriage with fairly intrusive attitudes but after the experience of one or two children realize that it is neither necessary nor possible to monitor every activity of the child. When, and if, more children are added, this attitude becomes more prominent again, perhaps because of the necessity for keeping order. However, this increase does not nearly approach the pronounced degree of intrusiveness of mothers with one or two children.

References


Adorno, T.W., Frenkel-Brunswik, E. Levinson, D.J., and Sanford, R.N. The Authoritarian Personality. New York: Harper, 1950.

Block, J. Lives through Time. Berkeley: Bancroft Books, 1971.

Cronbach, L.J. and Furby, L. How Should We Measure Change -- or Should We? Psychological Bulletin, 76, 1970, 68-80.

Duncan, O. D. Inheritance of Poverty or Inheritance of Race? In Daniel P. Moynihan (Ed.), On Understanding Poverty. New York: Basic Books, 1968. Pp. 85-110.

Ernhart, C.B. and Loevinger, J. Authoritarian Family Ideology: A Measure, its Correlates, and its Robustness. Multivariate Behavioral Research Monographs, 1969.

Goldberger, A.S. and Duncan, O.D. (Eds.) Structural Equation Models in the Social Sciences. New York: Seminar, 1973.

Harnischfeger, A. and Wiley, D.E. Maternal Attitudes. (Progress Report). University of Chicago, Nov. 1973.

Jordan, T.E. A Neonatal Cohort. Technical Report No. 2. St. Louis: Central Midwestern Regional Educational Laboratory, 1967 (a).

Jordan, T.E. Longitudinal Study of Preschool Development. Technical Report No. 1. Central Midwestern Regional Educational Laboratory, St. Louis, 1967 (b)

Jordan, T.E. Retrospective versus prospective technique in research on learning disability. Journal of Special Education, 1, 1967 (c), 257-265.

| | |
|---|---|
| Jordan, T.E. | Social class background in five St. Louis, Missouri hospitals. EDAP Technical Report No. 4. St. Louis, Missouri: Central Midwestern Regional Educational Laboratory, 1968. |
| Jordan, T.E. | Early Developmental Adversity and the First Two Years of Life. Multivariate Behavioral Research Monographs, 6, 1971. |
| Klemmetti, A. and Saxen, L. | Prospective versus Retrospective Approach in the Search for Environmental Causes of Malinformations. American Journal of Public Health, 57, 1967, 2071-2075. |
| McGuire, C. and White, G.D. | The Measurement of Social Status. Research Paper in Human Development No. 3 (revised). Department of Educational Psychology, The University of Texas, March, 1955. |
| Oden, M.H. | The Fulfillment of Promise: 40-year Follow-up of Terman Gifted Group. Genet. Psych. Mon., 77, 1968, 3-93. |
| Schneider, D.M. and Smith, R.T. | Class Differences and Sex Roles in American Kinship and Family Structure. Englewood Cliffs, N.J.: Prentice-Hall, 1973. |
| Shils, E.A. | Deference. In Jackson, J.A. (Ed.), Social Stratification. Cambridge: Cambridge University Press, 1968, Pp.104-132. |
| U.S. Department of Commerce, Bureau of the Census | Statistical Abstract of the United States 1973. Washington, D.C.: U.S. Government Printing Office, 1973. |
| Warner, L.W., Meeker, M, and Eells, K. | Social Class in America. Chicago: Science Research Associates, 1949. |
| Wiley, D.E. and Harnischfeger, A. | Post Hoc, Ergo Propter Hoc: Problems in the Attribution of Change. Studies of Educative Processes, No. 7, University of Chicago, 1973 (revised, 1974). |

Wiley, D.E. and Hornik, R. — Measurement Error and the Analysis of Panel Data. Studies of Educative Processes, No. 5, University of Chicago, 1973.

Yarrow, M.R., Campbell, J.D., and Burton, R.V. — Recollections of Childhood: A Study of the Retrospective Method. Monograph of the Society for Research in Child Development, 138, 1970.

Dunn, L.M. — Expanded Manual, Peabody Picture Vocabulary Test. Circle Pines, Minn.: American Guidance Service, 1965.

# TABLES and FIGURES

Table 1. Hospital, Adversity, and Month of Delivery for the Sample of Births

| | High Risk | | | | Control | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| Hospitals | Dec.66 | Jan.67 | Feb.67 | March67 | Dec.66 | Jan.67 | Feb.67 | March67 | |
| Homer Phillips | 94 | 55 | 37 | 31 | 45 | 60 | 52 | 45 | 419 |
| Desloge | 20 | 19 | 16 | 5 | 26 | 22 | 24 | 6 | 138 |
| St. Mary's | 11 | 12 | 2 | 5 | 39 | 38 | 22 | 9 | 138 |
| St. John's | 24 | 47 | 55 | 41 | 6 | 12 | 8 | 18 | 211 |
| Jewish | 0 | 1 | 9 | 23 | 0 | 0 | 20 | 46 | 99 |
| Total | 149 | 134 | 119 | 105 | 116 | 132 | 126 | 124 | |
| Group Total | | 507 | | | | 498 | | | 1005* |

* Three data were excluded.

Source: Jordan, 1967b, Table I.

Table 2. Marital Status of Blacks and Whites

| Marital Status | White | | Black | | Total | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Unmarried | 6 | 1.14 | 134 | 32.60 | 140 | 14.94 |
| Married | 520 | 98.86 | 277 | 67.40 | 797 | 85.06 |
| | 526 | 100.00 | 411 | 100.00 | 937 | 100.00 |
| Missing | 7 | - | 64 | - | 71 | - |
| Total | 533 | | 474 | | 1008 | |

Table 3. Comparison of Mothers' Age Distributions for Race and Family Type (Census Data vs. St.Louis Baby Study Sample)

| Age of Head* or Mother** at Census Time | Married Mothers | | Unmarried Mothers | |
|---|---|---|---|---|
| | Census Data* | St.Louis Data** | Census Data* | St.Louis Data** |
| **Black Families** | % | % | % | % |
| <25 | 16.46 | 33.57 | 30.01 | 81.34 |
| 25-34 | 47.76 | 43.68 | 48.05 | 16.42 |
| 35-44 | 25.16 | 21.66 | 18.67 | 2.24 |
| 45-64 | 10.10 | 1.08 | 3.07 | - |
| ≥65 | 0.52 | - | 0.20 | - |
| Total Families | 867,784 | 277 | 341,634 | 134 |
| Median Age | 32.02 | 28.76 | 29.16 | <25 |
| **White Families** | | | | |
| <25 | 13.49 | 22.12 | 29.41 | 66.67 |
| 25-34 | 53.41 | 55.77 | 51.51 | 16.67 |
| 35-44 | 27.72 | 20.38 | 16.61 | 16.67 |
| 45-64 | 5.24 | 1.73 | 2.27 | - |
| ≥65 | 0.14 | - | 0.20 | - |
| Total Families | 7,687,015 | 520 | 523,158 | 6 |
| Median Age | 31.82 | 30.00 | 29.00 | <25 |

* Age of Head of Household as of April , 1970. Source: U.S. Dept. of Commerce, Social & Economic Statistics Administration, Bureau of the Census, 1970 Census of Population. Volume 1, 1973.

** Age of Mother during the initial data collection (Dec. 1966 - March 1967) plus 3 years.

Table 4. Comparison of Average Income for Family Type and Race (Census Data)

| Age | % by which White Household Income exceeds Black | | % by which Income of Male Headed Households exceeds that for Households Headed by Unmarried Mothers | |
|---|---|---|---|---|
| | Male Head | Unmarried Mothers | Black | White |
| <25 | 14 | 10 | 147 | 156 |
| 25-34 | 25 | 17 | 175 | 194 |
| 35-44 | 43 | 15 | 147 | 208 |
| 45-64 | 58 | 26 | 104 | 156 |
| ≥65 | 78 | 45 | 26 | 55 |

Table 5 Decomposition of the Hollingshead Two-Factor Index of Social Position

Score = 4 x Education + 7 x Occupation

| | | Education (weight = 4) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | 1 | 11 | 15 | 19 | 23 | 27 | 31 | 35 |
| | 2 | 18 | 22 | 26 | 30 | 34 | 38 | 42 |
| | 3 | 25 | 29 | 33 | 37 | 41 | 45 | 49 |
| Occupation | 4 | 32 | 36 | 40 | 44 | 48 | 52 | 56 |
| | 5 | 39 | 43 | 47 | 51 | 55 | 59 | 63 |
| (weight = 7) | 6 | 46 | 50 | 54 | 58 | 62 | 66 | 70 |
| | 7 | 53 | 57 | 61 | 65 | 69 | 73 | 77 |
| | 8 | 60 | 64 | 68 | 72 | 76 | 80 | 84 |

Table 6 Decomposition of the McGuire & White Index of Social Status

| McGuire & White | Occupational Level | Educational Level | Source of Income |
|---|---|---|---|
| 14 | 99 | 99 | 99 = Missing |
| 15 | 1 | 2 | 1 |
| 16 | 1 | 1 | 2 |
| 17 | 2 | 1 | 1 |
| 18 | 1 | 3 | 1 |
| 19 | 1 | 2 | 2 |
| 20 | 1 | 1 | 3 |
| 21 | 2 | 1 | 2 |
| 22 | 1 | 3 | 2 |
| 23 | 1 | 2 | 3 |
| 24 | 1 | 1 | 4 |
| 25 | 2 | 1 | 3 |
| 26 | 1 | 3 | 3 |
| 27 | 1 | 2 | 4 |
| 28 | 2 | 2 | 3 |
| 29 | 2 | 1 | 4 |
| 30 | 1 | 3 | 4 |
| 31 | 2 | 3 | 3 |
| 32 | 2 | 2 | 4 |
| 33 | 3 | 2 | 3 |
| 34 | 2 | 4 | 3 |
| 35 | 2 | 3 | 4 |
| 36 | 3 | 3 | 3 |
| 37 | 3 | 2 | 4 |
| 38 | 2 | 4 | 4 |
| 39 | 3 | 4 | 3 |
| 40 | 3 | 3 | 4 |
| 41 | 3 | 2 | 5 |
| 42 | 4 | 2 | 4 |
| 43 | 3 | 4 | 4 |
| 44 | 3 | 3 | 5 |
| 45 | 3 | 6 | 3 |
| 46 | 3 | 5 | 4 |
| 47 | 3 | 4 | 5 |
| 48 | 4 | 4 | 4 |
| 49 | 4 | 3 | 5 |
| 50 | 3 | 5 | 5 |
| 51 | 4 | 5 | 4 |
| 52 | 4 | 4 | 5 |
| 53 | 5 | 4 | 4 |
| 54 | 4 | 6 | 4 |
| 55 | 4 | 5 | 5 |
| 56 | 5 | 5 | 4 |
| 57 | 5 | 4 | 5 |
| 58 | 4 | 6 | 5 |
| 59 | 6 | 3 | 5 |
| 60 | 5 | 5 | 5 |

Table 6 (cont'd)

| McGuire & White | Occupational Level | Educational Level | Source of Income |
|---|---|---|---|
| 61 | 4 | 7 | 5 |
| 62 | 6 | 4 | 5 |
| 63 | 5 | 6 | 5 |
| 64 | 5 | 5 | 6 |
| 65 | 6 | 5 | 5 |
| 66 | 6 | 4 | 6 |
| 67 | 5 | 6 | 6 |
| 68 | 6 | 6 | 5 |
| 69 | 6 | 5 | 6 |
| 70 | 5 | 7 | 6 |
| 71 | 7 | 4 | 6 |
| 72 | 6 | 6 | 6 |
| 74 | 7 | 5 | 6 |
| 75 | 7 | 4 | 7 |
| 76 | 6 | 6 | 7 |
| 77 | 7 | 6 | 6 |
| 78 | 7 | 5 | 7 |
| 79 | 6 | 7 | 7 |
| 80 | 7 | 7 | 6 |
| 81 | 7 | 6 | 7 |
| 84 | 7 | 7 | 7 |

Table 7 Assignment of Social Class Categories from the Occupational Level Component Scores of the McGuire & White and the Two Hollingshead Scales.

| McGuire | Hollingshead | Hollingshead | Our Score | |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | |
| 1 | 2 | 2 | 2 | |
| 2 | 2 | 2 | 3 | |
| 3 | 2 | 2 | 4 | |
| 2 | 3 | 3 | 4 | |
| 3 | 3 | 3 | 5 | |
| 3 | 4 | 4 | 5 | |
| 4 | 3 | 3 | 6 | |
| 4 | 4 | 4 | 7 | |
| 4 | 5 | 5 | 8 | |
| 5 | 4 | 4 | 8 | |
| 5 | 5 | 5 | 9 | cutting point |
| 5 | 6 | 6 | 10 | |
| 6 | 5 | 5 | 10 | |
| 6 | 6 | 6 | 11 | |
| 6 | 7 | 7 | 12 | |
| 7 | 6 | 6 | 12 | |
| 7 | 7 | 7 | 13 | |
| 7 | 8 | 8 | 14 | |

Lower class = 10 - 14
Middle class = 1 - 9

Table 8 Frequencies and Percentages for Social Class Category by Race

| Social Class | White | | Black | | Total | |
|---|---|---|---|---|---|---|
| | N | Per. | N | Per. | N | Per. |
| Low | 130 | 14% | 343 | 37% | 473 | 51% |
| Middle | 349 | 38% | 98 | 11% | 447 | 49% |
| Sub Total | 479 | 52% | 441 | 48% | 920 | 100% |
| Missing | | | | | 88 | |
| Total | | | | | 1008 | |

Table 9 Assignment of Stability Scores to Families Based on the Mothers Marital Status at Birth (wed or not), the Father Figure at 3 Years (father/other/none), the Father Figure at 4 Years (biological/step/other), and the Head of the House at 4 Years (father/mother/other).

| Wed or Not | 3-Year Father Figure | 4-Year Father Figure | Head of House |
|---|---|---|---|
| Wed | Father | Biological | Father |
| Missing | Father | Biological | Father |
| Not | Father | Biological | Father |
| Wed | Father | Biological | Mother |
| Missing | Father | Biological | Other |
| Not | Father | Biological | Other |
| Wed | Father | Other | Father |

The remaining possibilities are considered unstable.

Table 10 Frequencies and Percentages* for Race-Social Class Category by Paternal Stability

| Race-Social Class | Missing Data | Father Stable | | Unstable | |
|---|---|---|---|---|---|
| | N = 290 | N | Per | N | Per |
| Black - Low | | 70 | 32% | 152 | 68% |
| Black - Middle | | 28 | 53% | 25 | 47% |
| White - Low | | 78 | 78% | 22 | 22% |
| White - Middle | | 236 | 91% | 24 | 9% |

*Percentages are calculated on basis of number of families in each race-social class group for whom information concerning stability was available.

Table 11 Algorithm for Assigning Number of Years of Education to Fathers from the Decomposition of the McGuire & White and Hollingshead Social Status Scales.

| McGuire & White | Hollingshead | # Years Education |
|---|---|---|
| 0,1 | 1 | 18 |
| 1 | 0 | 18 |
| 0-2 | 2 | 16 |
| 2 | 0 | 16 |
| 0-3 | 3 | 14 |
| 3 | 0 | 14 |
| 4 | 3 | 13 |
| 0-4 | 4 | 12 |
| 4 | 0 | 12 |
| 0-5 | 5 | 10 |
| 5 | 0 | 10 |
| 5 | 6 | 9 |
| 6 | 0 | 8 |
| 0-6 | 6 | 8 |
| 7 | 6 | 7 |
| 7 | 0 | 7 |
| 0-7 | 7 | 6 |

Table 12 Frequencies and Percentages* for Race-Social Class Category by Father's Educational Level

| Race-Social Class | Father's Education | | | | | |
|---|---|---|---|---|---|---|
| | Missing Data | Less than High School | | High School | Greater than High School | |
| | N = 0 | N | Per | N Per | N | Per |
| Black - Low | | 214 | 62% | 78 23% | 51 | 15% |
| Black - Middle | | 45 | 46% | 23 24% | 30 | 31% |
| White - Low | | 67 | 52% | 44 34% | 19 | 15% |
| White - Middle | | 53 | 15% | 74 21% | 222 | 64% |

*Percentages are calculated on basis of number of families in each race-social class group who provided information concerning the father's educational level.

Table 13 Frequencies and Percentages* for Race-Social Class Category by Mother's Educational Level

| Race-Social Class | Missing Data | Mother's Education: Less than High School | | High School | | Greater than High School | |
|---|---|---|---|---|---|---|---|
| | N = 254 | N | Per | N | Per | N | Per |
| Black - Low | | 149 | 61% | 80 | 33% | 14 | 6% |
| Black - Middle | | 22 | 39% | 22 | 39% | 12 | 21% |
| White - Low | | 45 | 43% | 52 | 50% | 8 | 8% |
| White - Middle | | 37 | 14% | 123 | 46% | 106 | 40% |

*Percentages are calculated on basis of number of families in each race-social class group who provided information concerning the mother's educational level.

Table 14 Frequencies and Percentages* for Race-Social Class Category by Mother's Employment Status

| Race-Social Class | Missing Data | Mother's Employment | | | | | |
|---|---|---|---|---|---|---|---|
| | | Full-Time | | Part-Time | | Home | |
| | N = 268 | N | Per | N | Per | N | Per |
| Black - Low | | 107 | 47% | 3 | 1% | 117 | 52% |
| Black - Middle | | 24 | 41% | 0 | 0% | 34 | 59% |
| White - Low | | 31 | 30% | 7 | 7% | 66 | 63% |
| White - Middle | | 38 | 14% | 29 | 11% | 201 | 75% |

*Percentages are calculated on basis of number of families in each race-social class group who provided information concerning the mother's employment status.

Table 15 Median Birth Order and Frequencies and Percentages* for Race-Social Class Category by Birth Order of Child at Birth

| Race-Social Class | Median | Missing Data | Birth Order | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1st | | 2nd | | 3rd | | 4th | | 5th or Greater | |
| | | N = 345 | N | Per | N | Per | N | Per | N | Per | N | Per |
| Black - Low | 2.4 | | 85 | 36% | 34 | 15% | 35 | 15% | 16 | 7% | 63 | 27% |
| Black - Middle | 1.8 | | 25 | 43% | 15 | 26% | 5 | 9% | 3 | 5% | 10 | 17% |
| White - Low | 2.2 | | 35 | 34% | 24 | 23% | 20 | 19% | 10 | 10% | 14 | 14% |
| White - Middle | 2.1 | | 80 | 30% | 86 | 32% | 36 | 13% | 25 | 9% | 42 | 16% |

*Percentages are calcuated on basis of number of families in each race-social class group who provided information concerning birth order of child in study.

Table 16 Frequencies and Percentages* for Race-Social Class Category by Occurence of Additional Births Between Time of Birth and Time Child was 3 or 3½ years old

| Race-Social Class | Missing Data | Additional Births | | | |
|---|---|---|---|---|---|
| | | None | | Some | |
| | N = 376 | N | Per | N | Per |
| Black - Low | | 88 | 45% | 106 | 55% |
| Black - Middle | | 20 | 44% | 25 | 56% |
| White - Low | | 53 | 61% | 34 | 39% |
| White - Middle | | 132 | 56% | 102 | 44% |

*Percentages are calculated on basis of number of families in each race-social group who provided information concerning additional births.

Table 17 Median Age of Mother and Frequencies and Percentages* for Race-Social Class Category by Mother's Age at Child's Birth

| Race-Social Class | Missing Data | Mother's Age at Child's Birth | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Less than 18 | | 18-19 | | 20-21 | | 22-23 | | 24-25 | | 26-27 | | 28-29 | | 30-31 | | 32-33 | | 34-35 | | Greater than 35 | |
| | N = 0 | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per |
| Black - Low (Median -- 21.2) | | 90 | 26% | 52 | 15% | 36 | 10% | 35 | 10% | 25 | 7% | 17 | 5% | 14 | 4% | 20 | 6% | 15 | 4% | 17 | 5% | 22 | 6% |
| Black - Middle (Median -- 21.6) | | 20 | 20% | 16 | 16% | 13 | 13% | 11 | 11% | 9 | 9% | 8 | 8% | 5 | 5% | 3 | 3% | 3 | 3% | 4 | 4% | 6 | 6% |
| White - Low (Median -- 23.8) | | 12 | 9% | 16 | 12% | 19 | 15% | 13 | 10% | 23 | 18% | 21 | 16% | 4 | 3% | 6 | 5% | 0 | 0% | 10 | 8% | 6 | 5% |
| White - Middle (Median -- 26.4) | | 5 | 1% | 20 | 6% | 39 | 11% | 43 | 12% | 50 | 14% | 40 | 12% | 40 | 12% | 21 | 6% | 23 | 7% | 24 | 7% | 44 | 13% |

*Percentages are calculated on basis of number of families in each race-social class group who provided information concerning mother's age at child's birth.

Table 18-1 Means and Standard Deviations of the Dependent Variables by the Race-Social Class Groups

| | Black Lower | | | Black Middle | | | White Lower | | | White Middle | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Means | Std.Dev. | N | Means | Std.Dev. | N | Means | Std.Dev. | N | Means | Std.Dev. | N |
| RES-T I | 2.43 | .76 | 274 | 2.44 | .80 | 77 | 2.43 | .69 | 121 | 2.17 | .84 | 312 |
| RES-T 2 | 2.47 | .72 | 114 | 2.53 | .75 | 34 | 2.44 | .73 | 93 | 2.23 | .85 | 255 |
| INT-T I | 14.46 | 3.00 | 276 | 14.36 | 3.30 | 77 | 11.85 | 3.43 | 122 | 8.96 | 3.85 | 311 |
| INT-T 2 | 14.07 | 2.89 | 114 | 13.15 | 3.16 | 34 | 10.57 | 3.60 | 93 | 6.97 | 3.65 | 256 |
| AFI-T I | 21.70 | 4.03 | 273 | 21.83 | 4.04 | 77 | 19.21 | 4.86 | 121 | 15.31 | 5.30 | 310 |
| AFI-T 2 | 17.03 | 3.07 | 114 | 16.74 | 2.94 | 34 | 14.34 | 3.43 | 93 | 11.29 | 4.11 | 254 |
| PEA-T 2 | 20.89 | 7.24 | 138 | 22.88 | 9.03 | 32 | 27.63 | 11.17 | 65 | 32.40 | 11.72 | 195 |
| PEA-T 3 | 51.67 | 7.97 | 139 | 55.28 | 8.90 | 32 | 56.85 | 8.02 | 66 | 59.68 | 7.52 | 196 |

Table 18 Summary of Univariate Tests for Main Effects of Race-Social Class on the AFI Subscales and the Peabody Picture Vocabulary Test

| Variable | ms term | df term | ms error | df error | F | P |
|---|---|---|---|---|---|---|
| Res-$T_1$ | 2.019 | 3 | .746 | 446 | 2.708 | .05 |
| Int-$T_1$ | 800.572 | 3 | 13.284 | 446 | 60.265 | .001 |
| AFI-$T_1$ | 774.298 | 3 | 27.937 | 446 | 27.716 | .001 |
| Res-$T_2$ | 2.384 | 3 | .610 | 446 | 3.906 | .05 |
| Int-$T_2$ | 1255.827 | 3 | 11.951 | 446 | 105.078 | .001 |
| AFI-$T_2$ | 539.484 | 3 | 14.318 | 268 | 37.678 | .001 |
| Peab-$T_2$ | 1511.532 | 3 | 154.719 | 268 | 9.770 | .001 |
| Peab-$T_3$ | 646.330 | 3 | 58.271 | 268 | 11.092 | .001 |



C6

C7

Table 19 Frequencies and Percentages of Families in White - High Middle Race-Social Class by Demographic Categories*

Maternal Employment

| | Missing Data** | | Full-time | | Part-time | | Home | |
|---|---|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per | N | Per |
| Excluded | 81 | 34 | 26 | 17 | 19 | 12 | 112 | 71 |
| Included | | | 12 | 11 | 10 | 9 | 89 | 80 |

Mother's Educational Level

| | Missing Data** | | Less than High School | | High School | | Greater than High School | |
|---|---|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per | N | Per |
| Excluded | 83 | 35 | 28 | 18 | 72 | 46 | 55 | 35 |
| Included | | | 9 | 8 | 51 | 46 | 51 | 46 |

Father's Educational Level

| | Missing Data** | | Less than High School | | High School | | Greater than High School | |
|---|---|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per | N | Per |
| Excluded | 0 | 0 | 43 | 18 | 47 | 20 | 148 | 62 |
| Included | | | 10 | 9 | 27 | 24 | 74 | 67 |

Additional Births

| | Missing Data** | | None | | Some | |
|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per |
| Excluded | 115 | 48 | 70 | 57 | 53 | 43 |
| Included | | | 62 | 56 | 49 | 44 |

Table 19 (cont'd)

**Birth Order**

| | Missing Data** | | 1st | | 2nd | | 3rd | | 4th | | 5th or greater | | Median |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | |
| Excluded | 0 | 0 | 54 | 34 | 45 | 28 | 18 | 11 | 13 | 8 | 28 | 18 | 2.1 |
| Included | | | 26 | 23 | 41 | 37 | 18 | 16 | 12 | 11 | 14 | 13 | 2.2 |

**Mother's Age**

| | Missing Data | | 17 or less | | 18-19 | | 20-21 | | 22-23 | | 24-25 | | 26-27 | | 28-29 | | 30-31 | | 32-33 | | 33-34 | | 35 or more | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per | N | Per |
| Excluded (Median = 26.4) | 0 | 0 | 4 | 2 | 15 | 6 | 30 | 13 | 26 | 11 | 34 | 14 | 24 | 10 | 24 | 10 | 15 | 6 | 16 | 7 | 16 | 7 | 34 | 14 |
| Included (Median = 26.6) | | | 1 | 1 | 5 | 5 | 9 | 8 | 17 | 15 | 16 | 14 | 16 | 14 | 16 | 14 | 6 | 5 | 7 | 6 | 8 | 7 | 10 | 9 |

**Stability of Father**

| | Missing Data** | | Stable | | Unstable | |
|---|---|---|---|---|---|---|
| | N | Per | N | Per | N | Per |
| Excluded | 89 | 37 | 125 | 84 | 24 | 16 |
| Included | | | 111 | 100 | 0 | 0 |

*There were 349 White-High Middle Families in the overall sample. Of these, complete data were not available on 238. Those families were excluded from the sample. The number of families included in the analysis was 111.

**Percent of missing data was calculated by dividing by the total number of families excluded from the analysis (N = 238). All other percentages were calculated by dividing by either the total number of families in the excluded subsample who provided data on the factor of interest or the total number of families in the subsample which was used in the analysis (N = 111).

Table 20 Overall Summary Statistics by Dependent Variable for White-Middle Class Subsample ("Analytic" Subsample, n = 111)

| Variable | Mean | Standard Deviation | Variance | Minimum Value | Maximum Value | Range | Standard Error | Reliability |
|---|---|---|---|---|---|---|---|---|
| Res-T1 | 2.108 | .835 | .697 | 0 | 3 | 3 | .079 | .77 |
| Res-T2 | 2.261 | .871 | .758 | 0 | 3 | 3 | .083 | .72 |
| Int-T1 | 8.811 | 3.337 | 11.137 | 0 | 16 | 16 | .317 | .82 |
| Int-T2 | 6.820 | 3.169 | 10.040 | 0 | 15 | 15 | .301 | .84 |
| AFI-T1 | 13.784 | 4.426 | 19.589 | 3 | 26 | 23 | .420 | .81 |
| AFI-T2 | 9.820 | 3.317 | 11.004 | 3 | 19 | 16 | .315 | .79 |
| Pea-T2 | 33.180 | 11.788 | 138.949 | 8 | 60 | 52 | 1.119 | |
| Pea-T3 | 60.324 | 6.784 | 46.021 | 43 | 79 | 36 | .644 | |

Table 21 Intercorrelations Among the Measures -- Residual Error Correlation Matrix*

| Variable | Res-T1 | Int-T1 | AFI-T1 | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 |
|---|---|---|---|---|---|---|---|---|
| Res-T1 | 1 | | | | | | | |
| Int-T1 | .40 | 1 | | | | | | |
| AFI-T1 | .08 | .63 | 1 | | | | | |
| Res-T2 | .58 | .34 | .17 | 1 | | | | |
| Int-T2 | .29 | .57 | .37 | .51 | 1 | | | |
| AFI-T2 | .16 | .46 | .52 | .39 | .59 | 1 | | |
| Pea-T2 | -.07 | -.14 | -.05 | -.14 | -.21 | -.23 | 1 | |
| Pea-T3 | -.09 | -.18 | -.17 | -.20 | -.14 | -.25 | .43 | 1 |

*estimated on 99 degrees of freedom

**Table 22** Summary of Results on Unbiased Multivariate Tests of Main Effects of Factors

| Source | Mean Squares and Products | | | | | | | | Degrees of Freedom | Multivariate | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Res-T1 | Int-T1 | AFI-T1 | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 | | Λ | F |
| Mother's Age | .06 | | | | | | | | | | |
| | 1.16 | 21.82 | | | | | | | | | |
| | 1.89 | 35.64 | 58.21 | | | | | | | | |
| | .12 | 2.32 | 3.78 | .25 | | | | | | | |
| | 1.37 | 25.75 | 42.06 | 2.73 | 30.39 | | | | 1 | .93 | .90 |
| | .78 | 14.65 | 23.92 | 1.55 | 17.29 | 9.83 | | | | | |
| | -1.51 | -28.34 | -46.29 | -3.01 | -33.45 | -19.02 | 36.81 | | | | |
| Linear | -2.63 | -49.53 | -80.89 | -5.25 | -58.45 | -33.24 | 64.32 | 112.40 | | | |
| | .23 | | | | | | | | | | |
| | 2.21 | 20.94 | | | | | | | | | |
| | 1.79 | 16.95 | 13.72 | | | | | | | | |
| | -.20 | -1.86 | -1.50 | .16 | | | | | | | |
| | 2.35 | 22.25 | 18.01 | -1.97 | 23.64 | | | | 1 | .90 | 1.34 |
| | 3.73 | 35.28 | 28.56 | -3.13 | 37.49 | 59.45 | | | | | |
| | -3.33 | -31.50 | -25.50 | 2.79 | -33.47 | -53.08 | 47.40 | | | | |
| Quadratic | -2.95 | -27.90 | -22.59 | 2.47 | -29.65 | -47.02 | 41.98 | 37.19 | | | |
| Mother's Employment | .12 | | | | | | | | | | |
| | -.15 | .72 | | | | | | | | | |
| | -.71 | .13 | 5.27 | | | | | | | | |
| | -.09 | -.32 | 1.17 | .43 | | | | | | | |
| | -.26 | 1.79 | -.51 | -1.00 | 4.56 | | | | 2 | .88 | .78 |
| | .28 | -1.17 | -.56 | .44 | -2.84 | 1.92 | | | | | |
| | 4.47 | -8.64 | -22.39 | -1.02 | -18.07 | 15.38 | 185.79 | | | | |
| | 2.88 | -4.04 | -16.54 | -1.90 | -7.48 | 7.59 | 110.91 | 70.12 | | | |
| Mother's Education | .25 | | | | | | | | | | |
| | .33 | 32.28 | | | | | | | | | |
| | 2.81 | 47.93 | 93.28 | | | | | | | | |
| | .42 | 3.71 | 9.10 | 1.01 | | | | | | | |
| | .07 | 23.10 | 32.77 | 2.41 | 16.65 | | | | 2 | .78 | 1.54* |
| | .79 | 5.77 | 15.52 | 1.79 | 3.64 | 3.22 | | | | | |
| | -5.05 | -32.06 | -92.55 | -10.99 | -19.81 | -19.87 | 123.25 | | | | |
| | -1.39 | 2.53 | -9.71 | -1.90 | 2.75 | -3.78 | 24.87 | 8.40 | | | |

Table 22 (cont'd) Summary of Results on Unbiased Multivariate Tests of Main Effects of Factors

| Source | Mean Squares and Products | | | | | | | | Degrees of Freedom | Multivariate | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Res-T1 | Int-T1 | AFI-T1 | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 | | Λ | F |
| Father's Education | .13 | | | | | | | | | | |
| | .34 | .99 | | | | | | | | | |
| | -.13 | -.10 | 1.00 | | | | | | | | |
| | -.17 | -.41 | .29 | .24 | | | | | | | |
| | .08 | .37 | .44 | -.03 | .36 | | | | 2 | .91 | .56 |
| | 1.17 | 3.04 | -1.61 | -1.59 | .50 | 11.03 | | | | | |
| | -2.54 | -6.34 | 4.46 | 3.60 | -.52 | -24.42 | 55.14 | | | | |
| | -1.84 | -4.09 | 4.87 | 2.83 | .62 | -18.38 | 43.27 | 36.89 | | | |
| Additional Births | .98 | | | | | | | | | | |
| | 6.48 | 43.00 | | | | | | | | | |
| | .86 | 5.71 | .76 | | | | | | | | |
| | .99 | 6.60 | .88 | 1.01 | | | | | | | |
| | 4.73 | 31.42 | 4.18 | 4.82 | 22.96 | | | | 1 | .92 | 1.06 |
| | .81 | 5.35 | .71 | .82 | 3.91 | .67 | | | | | |
| | -1.14 | -7.59 | -1.01 | -1.17 | -5.55 | -.94 | 1.34 | | | | |
| | 4.06 | 26.95 | 3.58 | 4.14 | 19.69 | 3.35 | -4.76 | 16.89 | | | |
| Birth Order | .50 | | | | | | | | | | |
| | 3.27 | 21.16 | | | | | | | | | |
| | -.96 | -6.25 | 1.85 | | | | | | | | |
| | -.21 | -1.37 | .40 | .09 | | | | | 1 | .86 | 1.91** |
| | -1.59 | -10.31 | 3.05 | .67 | 5.03 | | | | | | |
| | .40 | 2.61 | -.77 | -.17 | -1.27 | .32 | | | | | |
| | 10.47 | 67.82 | -20.03 | -4.39 | -33.05 | 8.36 | 217.33 | | | | |
| Linear | 9.85 | 63.84 | -18.86 | -4.13 | -31.12 | 7.87 | 204.58 | 192.58 | | | |
| | 2.13 | | | | | | | | | | |
| | 9.98 | 46.88 | | | | | | | | | |
| | 7.13 | 33.49 | 23.93 | | | | | | | | |
| | 1.32 | 6.19 | 4.42 | .82 | | | | | | | |
| | -1.64 | -7.71 | -5.51 | -1.02 | 1.27 | | | | 1 | .88 | 1.62** |
| | -2.48 | -11.67 | -8.34 | -1.54 | 1.92 | 2.90 | | | | | |
| | -3.34 | -15.67 | -11.20 | -2.07 | 2.58 | 3.90 | 5.24 | | | | |
| Quadratic | 3.47 | 16.27 | 11.63 | 2.15 | -2.68 | -4.05 | -5.44 | 5.65 | | | |

Table 22 (cont'd) Summary of Results on Unbiased Multivariate Tests of Main Effects of Factors

| Source | Mean Squares and Products | | | | | | | | Degrees of Freedom | Multivariate | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Res-T1 | Int-T1 | AFI-T1 | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 | | Λ | F |
| | .70 | | | | | | | | | | |
| | .97 | 8.32 | | | | | | | | | |
| | .26 | 7.27 | 15.94 | | | | | | | | |
| | .43 | .86 | .59 | .79 | | | | | 99 | | |
| | .74 | 4.94 | 4.45 | 1.36 | 9.05 | | | | | | |
| | .44 | 4.29 | 6.66 | 1.13 | 5.67 | 10.33 | | | | | |
| | -.66 | -4.56 | -2.14 | -1.45 | -7.45 | -8.53 | 135.30 | | | | |
| Resid. | -.49 | -3.38 | -4.64 | -1.21 | -2.73 | -5.45 | 33.12 | 44.61 | | | |

* Significant at .09 level.
** Significant at .07 level.
***Significant at .13 level.

Table 23 Summary of Univariate Tests on Main Effects of Mother's Education on Dependent Variables

| Variable | MS term | df term | MS error | df error | F | P |
|---|---|---|---|---|---|---|
| Res-T1 | .25 | 2 | .70 | 99 | .35 | .7040 |
| Int-T1 | 32.28 | 2 | 8.32 | 99 | 3.88 | .0239 |
| AFI-T1 | 93.28 | 2 | 15.94 | 99 | 5.85 | .0040 |
| Res-T2 | 1.01 | 2 | .79 | 99 | 1.28 | .2821 |
| Int-T2 | 16.65 | 2 | 9.05 | 99 | 1.84 | .1644 |
| AFI-T2 | 3.22 | 2 | 10.33 | 99 | .31 | .7331 |
| Pea-T2 | 123.25 | 2 | 135.30 | 99 | .91 | .4056 |
| Pea-T3 | 8.40 | 2 | 44.61 | 99 | .19 | .8287 |

Table 23-1 Auxiliary Analyses of Covariance on Main Effect of Mother's Education

| | | | | | | |
|---|---|---|---|---|---|---|
| Int-T1 * | 31.84 | 2 | 7.06 | 98 | 4.51 | .0134 |
| AFI-T1 ** | 34.59 | 2 | 9.18 | 97 | 3.77 | .0266 |

* Int-T1 when effect on Res-T1 is held constant.
**AFI-T1 when effects on Res-T1 and Int-T1 are held constant.

Table 24 Summary of Univariate Tests on Quadratic Effect of Birth Order

| Variable | MS term | df term | MS error | df error | F | P |
|---|---|---|---|---|---|---|
| Res-T1 | 2.13 | 1 | .70 | 99 | 3.02 | .0853 |
| Int-T1 | 46.88 | 1 | 8.32 | 99 | 5.63 | .0196 |
| AFI-T1 | 23.93 | 1 | 15.94 | 99 | 1.50 | .2236 |
| Res-T2 | .82 | 1 | .79 | 99 | 1.04 | .3110 |
| Int-T2 | 1.27 | 1 | 9.05 | 99 | .14 | .7090 |
| AFI-T2 | 2.90 | 1 | 10.33 | 99 | .28 | .5972 |
| Pea-T2 | 5.24 | 1 | 135.30 | 99 | .04 | .8445 |
| Pea-T3 | 5.65 | 1 | 44.61 | 99 | .13 | .7227 |

Table 24-1 Auxiliary Analysis of Covariance on Quadratic Effect of Birth Order

| | | | | | | |
|---|---|---|---|---|---|---|
| Int-T1 * | 22.73 | 1 | 7.06 | 98 | 3.22 | .0759 |

*Int-T1 when effect on Res-T1 is held constant.

Table 25 Summary of Univariate Tests on Linear Effect of Birth Order

| Variable | MS term | df term | MS error | df error | F | P |
|---|---|---|---|---|---|---|
| Res-T1 | .50 | 1 | .70 | 99 | .72 | .3994 |
| Int-T1 | 21.16 | 1 | 8.32 | 99 | 2.54 | .1140 |
| AFI-T1 | 1.85 | 1 | 15.94 | 99 | .12 | .7343 |
| Res-T2 | .09 | 1 | .79 | 99 | .11 | .7382 |
| Int-T2 | 5.03 | 1 | 9.05 | 99 | .56 | .4580 |
| AFI-T2 | .32 | 1 | 10.33 | 99 | .03 | .8603 |
| Pea-T2 | 217.33 | 1 | 135.30 | 99 | 1.61 | .2080 |
| Pea-T3 | 192.58 | 1 | 44.61 | 99 | 4.32 | .0404 |

Table 26 Summary of Results on Unbiased Tests of Main Effects of Factors Where AFI Subscale Measures Taken at Birth are Held Constant

| Source | Mean Squares and Products | | | | | Degrees of Freedom | Multivariate F | |
|---|---|---|---|---|---|---|---|---|
| | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 | | Λ | F |
| Mother's Age | .01 | | | | | | | |
| | .31 | 7.10 | | | | | | |
| | -.04 | -.87 | .11 | | | | | |
| | -.48 | -10.96 | 1.35 | 16.92 | | | | |
| Linear | -.92 | -21.18 | 2.60 | 32.71 | 63.24 | 1 | .96 | .67 |
| | .70 | | | | | | | |
| | -1.79 | 4.41 | | | | | | |
| | -4.50 | 11.57 | 29.04 | | | | | |
| | 3.56 | -9.16 | -23.00 | 18.22 | | | | |
| Quadratic | 3.56 | -9.15 | -22.96 | 18.19 | 18.16 | 1 | .92 | 1.63 |
| Mother's Employment | .53 | | | | | | | |
| | -.74 | 3.01 | | | | | | |
| | -.07 | -2.38 | 3.11 | | | | | |
| | -3.44 | -13.01 | 22.67 | 181.45 | | | | |
| | -2.95 | -5.59 | 12.50 | 105.87 | 63.69 | 2 | .89 | 1.07 |
| Mother's Education | .25 | | | | | | | |
| | .01 | .94 | | | | | | |
| | -.93 | -1.97 | 7.50 | | | | | |
| | -4.75 | 4.16 | 8.94 | 110.04 | | | | |
| | .36 | 3.36 | -8.27 | 8.35 | 12.46 | 2 | .92 | .76 |
| Father's Education | .48 | | | | | | | |
| | .30 | .29 | | | | | | |
| | -2.22 | -1.48 | 10.33 | | | | | |
| | 4.57 | 3.17 | -21.42 | 44.55 | | | | |
| | 3.73 | 3.17 | -17.98 | 38.07 | 35.83 | 2 | .92 | .82 |

Table 26 (cont'd) Summary of Results on Unbiased Tests of Main Effects of Factors

| Source | Mean Squares and Products | | | | | Degrees of Freedom | Multivariate | |
|---|---|---|---|---|---|---|---|---|
| | Res-T2 | Int-T2 | AFI-T2 | Pea-T2 | Pea-T3 | | Λ | F |
| Additional Birth | .08 | | | | | | | |
| | .26 | .92 | | | | | | |
| | -.28 | -.99 | 1.06 | | | | | |
| | .89 | 3.11 | -3.34 | 10.55 | | | | |
| | 1.56 | 5.44 | -5.84 | 18.45 | 32.25 | 1 | .99 | .26 |
| Birth Order | .57 | | | | | | | |
| | 3.57 | 22.21 | | | | | | |
| | .10 | .61 | .02 | | | | | |
| | -13.47 | -83.89 | -2.29 | 316.80 | | | | |
| Linear | -10.86 | -67.61 | -1.84 | 255.31 | 205.76 | 1 | .91 | 1.91* |
| | .03 | | | | | | | |
| | .85 | 26.99 | | | | | | |
| | .80 | 25.31 | 23.75 | | | | | |
| | -.27 | -8.53 | -8.00 | 2.69 | | | | |
| Quadratic | -.83 | -26.09 | -24.48 | 8.25 | 25.23 | 1 | .93 | 1.32 |
| | .52 | | | | | | | |
| | .77 | 6.26 | | | | | | |
| | .68 | 3.15 | 7.43 | | | | | |
| | -.97 | -4.91 | -6.95 | 136.59 | | | | |
| Residual | -.80 | -.66 | -3.25 | 32.57 | 44.21 | 96 | | |

* Significant at .10 level

Table 27 Summary of Univariate Tests on Linear Effect of Birth Order Where AFI Subscale Measures Taken at Birth are Held Constant.

| Variable | MS term | df term | MS error | df error | F | P |
|---|---|---|---|---|---|---|
| Res-T2 | .57 | 1 | .52 | 96 | 1.09 | .2988 |
| Int-T2 | 22.21 | 1 | 6.26 | 96 | 3.55 | .0627 |
| AFI-T2 | .02 | 1 | 7.43 | 96 | .00 | .9626 |
| Pea-T2 | 316.80 | 1 | 136.59 | 96 | 2.32 | .1311 |
| Pea-T3 | 205.76 | 1 | 44.21 | 96 | 4.65 | .0335 |

Table 27_1 Auxiliary Analyses of Covariance on Linear Effect of Birth Order

| | | | | | | |
|---|---|---|---|---|---|---|
| Int-T2 * | 12.84 | 1 | 5.18 | 95 | 2.48 | .1189 |
| Pea-T3 ** | 112.53 | 1 | 36.64 | 92 | 3.07 | .0830 |

* Int-T2 when effects on Res-T2 and all AFI subscales at Time 1 are held constant.

**Pea-T3 when effects on all other dependent variables are held constant.

**Figure 1**. Timing of St. Louis Data Collection

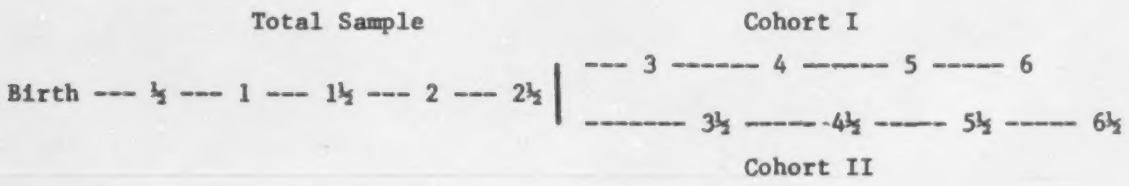


Figure 2. Mothers' Age at Child Birth for Blacks and Whites (Histogram)

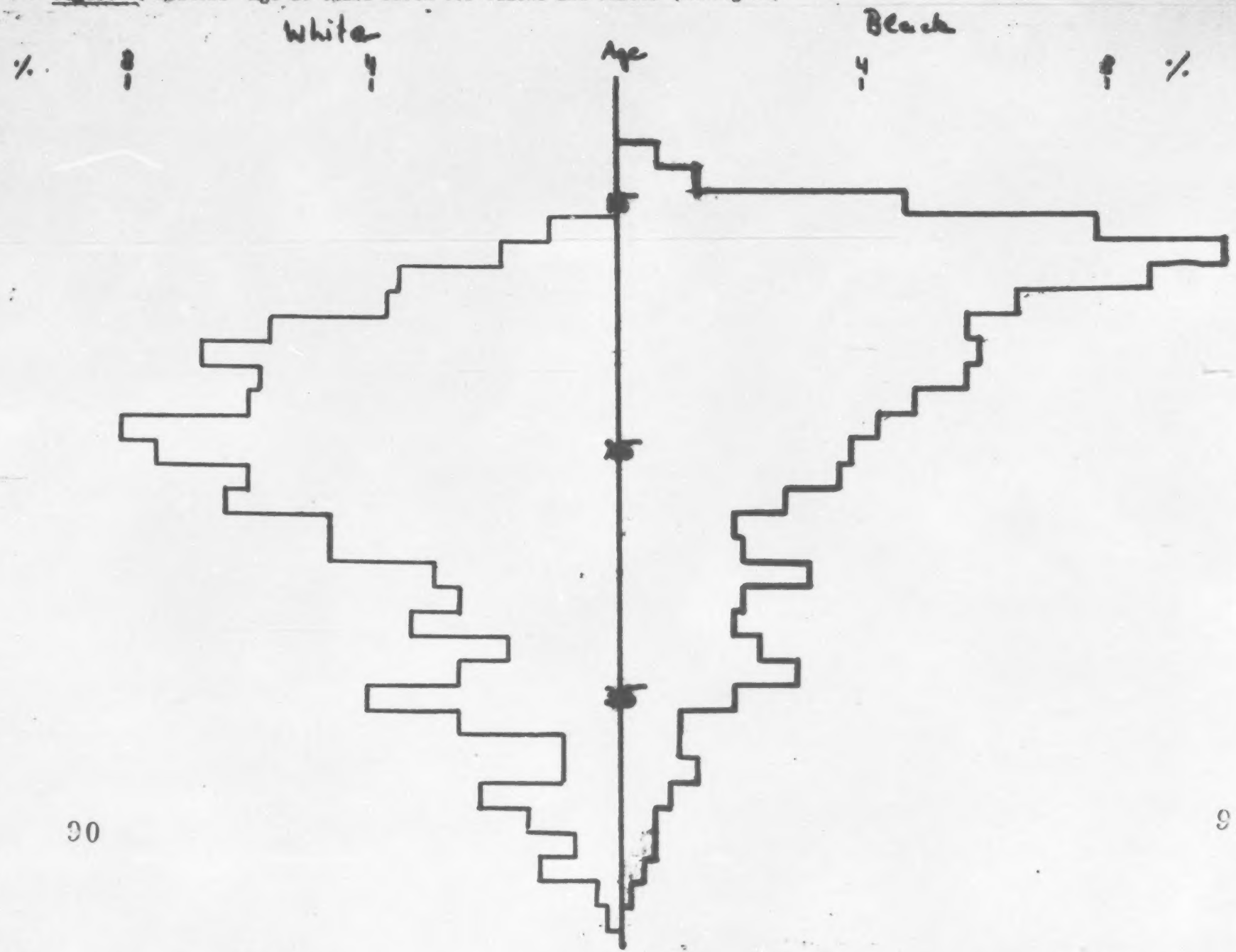
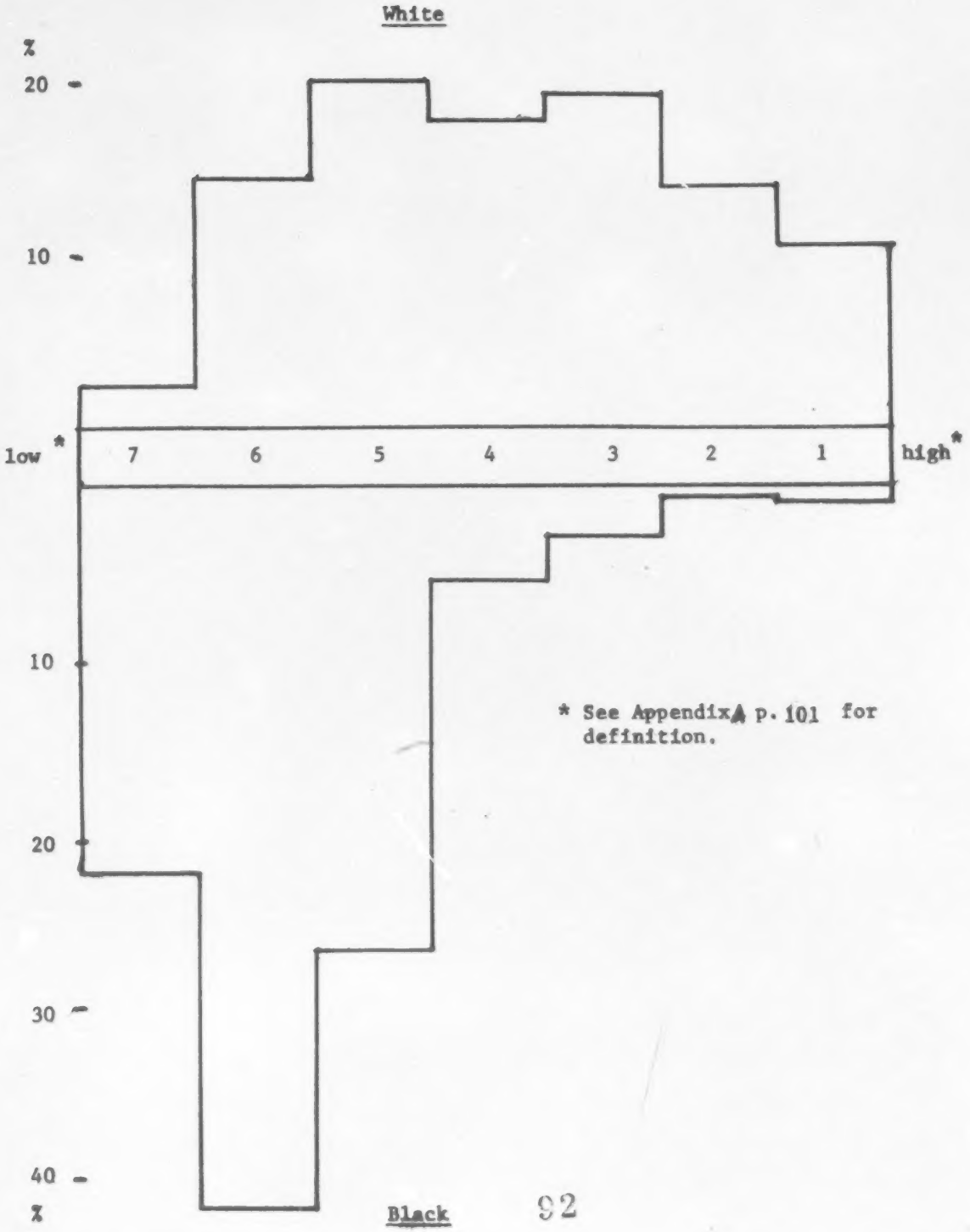
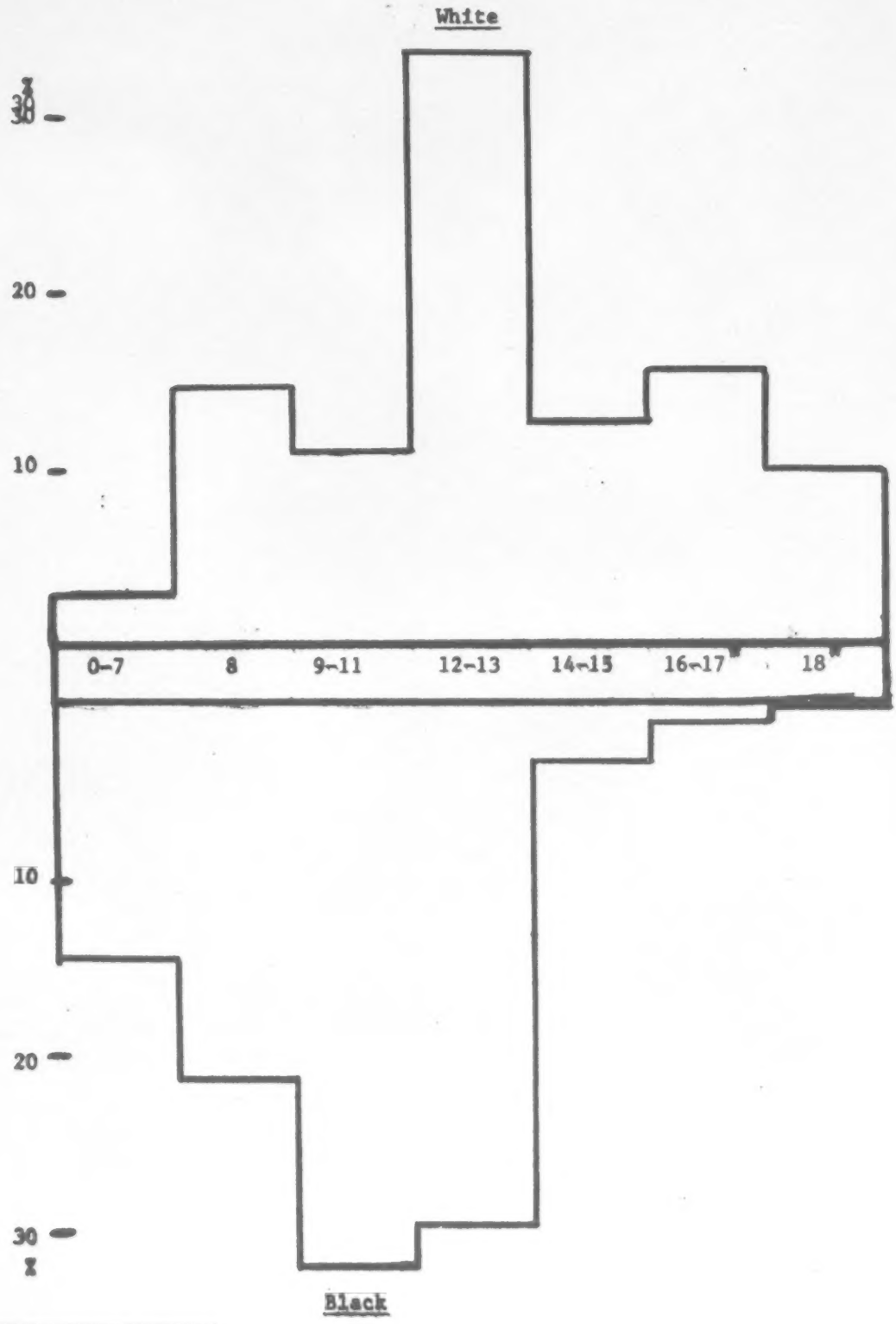


**Figure 18** Occupation of Blacks and Whites (Histogram)



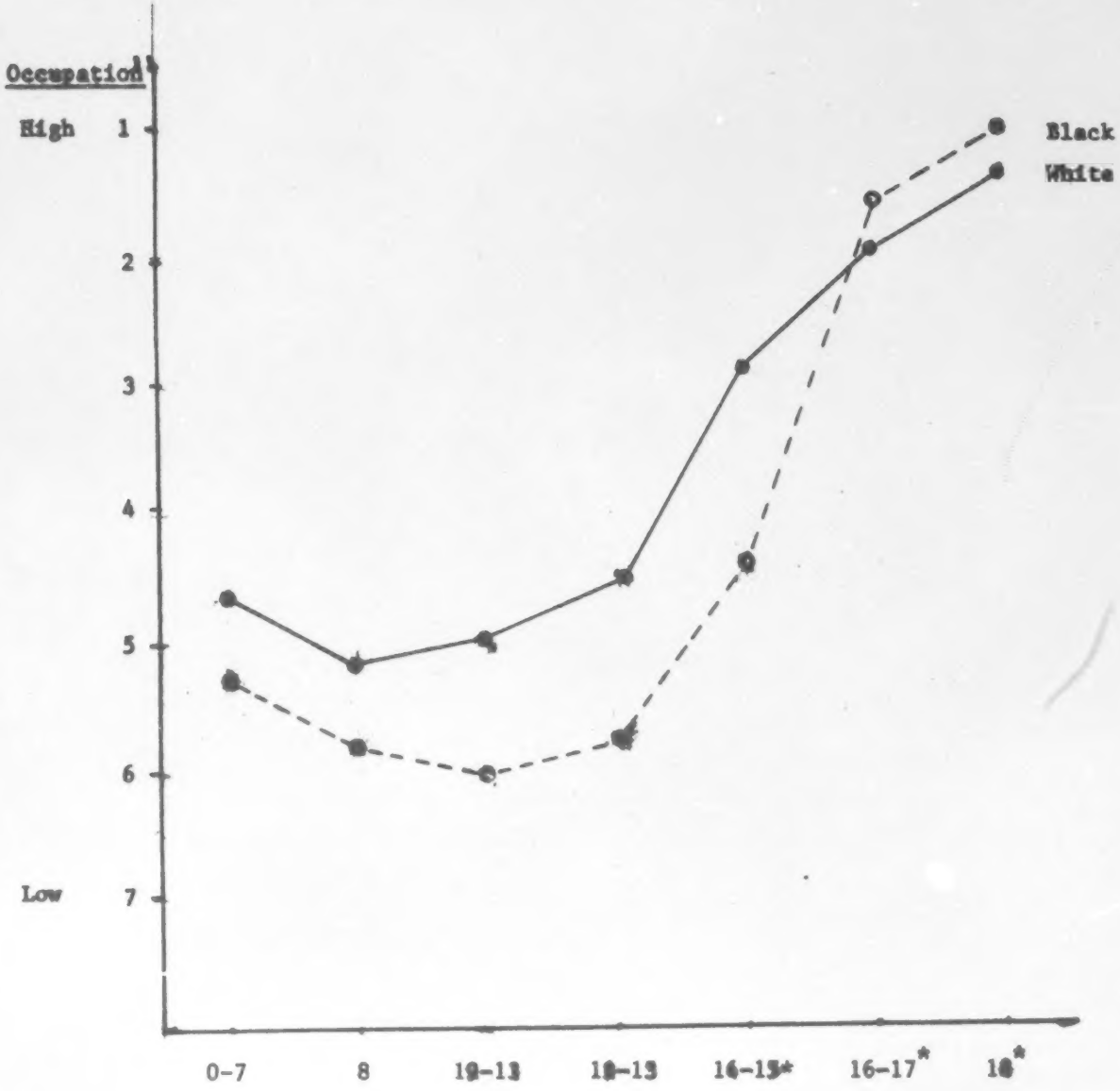

* See Appendix A p. 101 for definition.

Figure 4. Education of Blacks and Whites (Histogram)




* See Table A1. for Definition.

**Figure 5.** Comparison of Education and Occupation for Blacks and Whites




[1] See Appendix, page 101 for definition of categories.

* 16-17: "Graduate from a four-year college, university, or professional school with a recognized bachelor's degree, including four-year teacher colleges." (McGuire & White, 1955).
18: "Completed appropriate graduate work for a recognized profession at highest level; graduate of generally recognized, high status, four-year college." (McGuire & White, 1955).

# APPENDIX A

Table A1. Blacks' Education and Occupation (Head of Household)

| Occupation[1] | Years of Education 0-7 | 8 | 9-11 | 12-13 | 14-15 | 16-17[2] | 18[3] | Total | % |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 5 | 1.06 |
| 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0.64 |
| 3 | 0 | 1 | 5 | 2 | 4 | 0 | 0 | 12 | 2.54 |
| 4 | 1 | 9 | 3 | 10 | 2 | 0 | 0 | 25 | 5.30 |
| 5 | 55 | 31 | 15 | 25 | 0 | 0 | 0 | 126 | 26.69 |
| 6 | 1 | 27 | 84 | 76 | 8 | 0 | 0 | 196 | 41.53 |
| 7 | 11 | 31 | 44 | 19 | 0 | 0 | 0 | 105 | 22.25 |
| Total | 68 | 99 | 151 | 132 | 16 | 5 | 1 | 472* | |
| % | 14.41 | 20.97 | 31.99 | 27.97 | 3.39 | 1.06 | 0.21 | | |
| Mean | 5.32 | 5.79 | 6.05 | 5.76 | 4.38 | 1.60 | 1.00 | | |

[1] See page 191 for definition of categories
[2] "Graduate from a four-year college, university, or professional school with a recognized bachelor's degree, including four-year teacher colleges." (McGuire & White, 1955).
[3] "Completed appropriate graduate work for a recognized profession at highest level; graduate of a generally recognized, high status, four-year college." (McGuire & White, 1955).

* Excluding four missing data.

Table A2. Whites' Education and Occupation'(Head of Household)

| Occupation[1] | Years of Education | | | | | | | Total | % |
|---|---|---|---|---|---|---|---|---|---|
| | 0- 7 | 8 | 9-11 | 12-13 | 14-15 | 16-17[2] | 18[3] | | |
| 1 | 0 | 0 | 0 | 0 | 8 | 17 | 34 | 59 | 11.15 |
| 2 | 0 | 0 | 0 | 5 | 10 | 43 | 18 | 76 | 14.37 |
| 3 | 0 | 7 | 5 | 29 | 41 | 20 | 0 | 102 | 19.28 |
| 4 | 5 | 17 | 10 | 54 | 5 | 3 | 0 | 94 | 17.77 |
| 5 | 10 | 19 | 23 | 55 | 0 | 0 | 0 | 107 | 20.23 |
| 6 | 0 | 23 | 19 | 32 | 3 | 0 | 0 | 77 | 14.56 |
| 7 | 0 | 11 | 0 | 3 | 0 | 0 | 0 | 14 | 2.65 |
| Total | 15 | 77 | 57 | 178 | 67 | 83 | 52 | 529* | |
| % | 2.84 | 14.56 | 10.78 | 33.65 | 12.67 | 15.69 | 9.83 | | |
| Mean | 4.67 | 5.18 | 4.98 | 4.50 | 2.82 | 1.96 | 1.35 | | |

1 See page 101 for definition of categories.

2 "Graduate from a four-year college, university,or professional school with a recognized bachelor's degree, including four-year teachar colleges." (McGuire & White, 1955).

3 "Completed appropriate graduate work for a recognized profession at highest level; graduate of a generally recognized , high status, four-year college." (McGuire & White, 1955).

* Excluding four missing data.

Table A3. Mothers' Age Distributions for Blacks and Whites

| Age | Black | | | White | | |
|---|---|---|---|---|---|---|
| | n | % | cum% | n | % | cum% |
| 13 | 3 | 0.63 | 0.63 | 0 | 0 | 0 |
| 14 | 6 | 1.27 | 1.90 | 0 | 0 | 0 |
| 15 | 22 | 4.64 | 6.54 | 0 | 0 | 0 |
| 16 | 37 | 7.80 | 14.34 | 6 | 1.13 | 1.13 |
| 17 | 45 | 9.49 | 23.83 | 10 | 1.88 | 3.01 |
| 18 | 41 | 8.64 | 32.47 | 19 | 3.57 | 6.58 |
| 19 | 31 | 6.54 | 39.01 | 20 | 3.76 | 10.34 |
| 20 | 27 | 5.70 | 44.71 | 30 | 5.64 | 15.98 |
| 21 | 28 | 5.91 | 50.62 | 36 | 6.77 | 22.75 |
| 22 | 27 | 5.70 | 56.32 | 31 | 5.83 | 28.58 |
| 23 | 23 | 4.85 | 61.17 | 32 | 6.01 | 34.59 |
| 24 | 20 | 4.22 | 65.39 | 43 | 8.08 | 42.67 |
| 25 | 18 | 3.80 | 69.19 | 40 | 7.52 | 50.19 |
| 26 | 17 | 3.59 | 72.78 | 32 | 6.01 | 56.20 |
| 27 | 13 | 2.74 | 75.52 | 34 | 6.39 | 62.59 |
| 28 | 9 | 1.90 | 77.42 | 25 | 4.70 | 67.29 |
| 29 | 10 | 2.11 | 79.53 | 25 | 4.70 | 71.99 |
| 30 | 15 | 3.16 | 82.69 | 16 | 3.01 | 75.00 |
| 31 | 10 | 2.11 | 84.80 | 14 | 2.63 | 77.63 |
| 32 | 9 | 1.90 | 86.70 | 18 | 3.38 | 81.01 |
| 33 | 11 | 2.32 | 89.02 | 9 | 1.69 | 82.70 |
| 34 | 14 | 2.96 | 91.98 | 14 | 2.63 | 85.33 |
| 35 | 9 | 1.90 | 93.88 | 22 | 4.14 | 89.47 |
| 36 | 5 | 1.05 | 94.93 | 12 | 2.26 | 91.73 |
| 37 | 5 | 1.05 | 95.89 | 5 | 0.94 | 92.67 |
| 38 | 6 | 1.27 | 97.25 | 5 | 0.94 | 93.61 |
| 39 | 4 | 0.84 | 98.09 | 12 | 2.26 | 95.87 |
| 40 | 3 | 0.63 | 98.72 | 8 | 1.50 | 97.37 |
| 41 | 3 | 0.63 | 99.35 | 4 | 0.75 | 98.12 |
| 42 | 2 | 0.42 | 99.77 | 7 | 1.32 | 99.44 |
| 43 | 1 | 0.21 | 99.98 | 2 | 0.38 | 99.82 |
| 44 | 0 | 0 | 99.98 | 1 | 0.19 | 100.01 |
| Total | 474 * | Median = 21.90 | | 532 * | Median = | 25.97 |

* One datum in each group is missing.

Table A4. Summary Census Data for Household Type, Age of Household Head, and Race

| Household Description | Age of Head | Black n | Black % | Black Mean Income | Black %Fem. Labor Part. | White n | White % | White Mean Income | White %Fem. Labor Part. | Total n | Total % | Total Mean Income | Total %Fem. Labor Part. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | <25 | 142,816 | 16.46 | 6,322 | 46.58 | 1,037,098 | 13.49 | 7,436 | 29.32 | 1,179,914 | 13.79 | 7,325 | 31.41 |
| Male Head, | 25-34 | 414,418 | 47.76 | 8,701 | 50.75 | 4,105,924 | 53.41 | 10,893 | 25.57 | 4,520,342 | 52.84 | 10,692 | 27.88 |
| Own Children | 35-44 | 218,354 | 25.16 | 9,431 | 49.05 | 2,130,580 | 27.72 | 13,472 | 24.48 | 2,348,934 | 27.46 | 13,096 | 26.76 |
| under 6, | 45-64 | 87,648 | 10.10 | 8,905 | 44.86 | 402,843 | 5.24 | 14,065 | 26.52 | 490,491 | 5.73 | 13,143 | 29.80 |
| Wife Present | ≥65 | 4,548 | 0.52 | 5,888 | 34,26 | 10,570 | 0,14 | 10,489 | 29.07 | 15,118 | 0.18 | 9,105 | 30.63 |
| | Total | 867,784 | 10.14 | 8,532 | 48.95 | 7,687,015 | 89.86 | 11,307 | 25.83 | 8,554,799 | 100 | 11,025 | 28.19 |
| | <25 | 102,517 | 30.01 | 2,638 | 42.93 | 153,848 | 29.41 | 2,908 | 52.89 | 256,365 | 29.64 | 2,800 | 48.91 |
| Female Head, | 25-34 | 164,171 | 48.05 | 3,158 | 46.65 | 269,473 | 51.51 | 3,704 | 55.21 | 433,644 | 50.14 | 3,497 | 51.97 |
| Own Children | 35-44 | 63,793 | 18.67 | 3,817 | 47.60 | 86,922 | 16.61 | 4,377 | 52.96 | 150,715 | 17.43 | 4,410 | 50.69 |
| under 6, | 45-64 | 10,474 | 3.07 | 4,371 | 51.10 | 11,874 | 2.27 | 5,498 | 55.60 | 22,348 | 2.58 | 4,970 | 53.49 |
| Not Married | ≥65 | 679 | 0.20 | 4,674 | 36.38 | 1,041 | 0.20 | 6,759 | 44.18 | 1,720 | 0.20 | 5,936 | 41.10 |
| | Total | 341,634 | 39.50 | 3,165 | 45.83 | 523,158 | 60.50 | 3,629 | 54.15 | 864,792 | 100 | 3,446 | 50.86 |

(Adapted from: U.S. Dept. of Commerce, Social & Economic Statistics Administration, Bureau of the Census, 1970 Census of Population. Volume 1, 1973. Table 250.

# EARLY DEVELOPMENTAL ADVERSITY PROGRAM: PHASE II[1]

Thomas E. Jordan[2,3]

## Introduction

A previous document, EDAP Technical Report #2 (1), has alluded to the precedural problem of finding subjects for research on the basis of social strata hypothetically served by several hospitals in metropolitan St. Louis. This report is intended to describe specific hospital clienteles in light of data gathered while developing a cohort of newborn infants for prospective study.

## The Hospitals

1. St. Mary's Hospital is a medium-sized hospital in Richmond Heights. Established in 1924, it is a 511-bed general hospital. The pediatric service is operated through the St. Louis University Medical School facility.
2. Firmin Desloge Hospital is in a semi-industrial lower class area on South Grand Avenue. The hospital was built in 1947, and is part of the St. Louis University teaching facility along with St. Mary's and Cardinal Glennon Hospital, which is the pediatric facility. Firmin Desloge Hospital has three hundred and nineteen beds.

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[1] The work reported herein was performed pursuant to Contract No. OEC 3-7-063875-3056 with the United States Department of Health, Education, and Welfare, Office of Education for the Central Midwestern Regional Educational Laboratory, Inc., 10646 St. Charles Rock Road, St. Ann, Missouri, 63074.

[2] Thomas E. Jordan directs a research program of the Central Midwestern Regional Educational Laboratory, St. Ann, Missour.

[3] With the assistance of Stephen D. Spaner.

# EARLY DEVELOPMENTAL ADVERSITY PROGRAM: PHASE II[1]

Thomas E. Jordan[2,3]

## EDAP Technical Report #4: Social Class in Five St. Louis Hospitals

### Introduction

A previous document, EDAP Technical Report #2 (1), has alluded to the procedural problem of finding subjects for research on the basis of social strata hypothetically served by several hospitals in metropolitan St. Louis. This report is intended to describe specific hospital clienteles in light of data gathered while developing a conort of newborn infants for prospective study.

### The Hospitals

1. St. Mary's Hospital is a medium-sized hospital in Richmond Heights. Established in 1924, it is a 511-bed general hospital. The pediatric service is operated through the St. Louis University Medical School facility.
2. Firmin Desloge Hospital is in a semi-industrial lower class area on South Grand Avenue. The hospital was built in 1947, and is part of the St. Louis University teaching facility along with St. Mary's and Cardinal Glennon Hospital, which is the pediatric facility. Firmin Desloge Hospital has three hundred and nineteen beds.

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[1]The work reported herein was performed pursuant to Contract No. OEC 3-7-062875-3056 with the United States Department of Health, Education, and Welfare, Office of Education for the Central Midwestern Regional Educational Laboratory, Inc., 10646 St. Charles Rock Road, St. Ann, Missouri, 63074.

[2]Thomas E. Jordan directs a research program of the Central Midwestern Regional Educational Laboratory, St. Ann, Mo.

[3]With the assistance of Stephen D. Spaner.

3. St. John's Mercy Hospital is the newest of the hospitals under consideration. Opened in 1963, it contains five hundred and fifty three beds. It is a general service hospital located out in the western portion of St. Louis County.
4. Jewish Hospital is close to the group of medical facilities in midtown St. Louis known generically as the Barnes Hospital group. The facility was established in 1900, and provides general services through a bed capacity of five hundred and nineteen.
5. Homer Phillips Hospital is a city-owned facility located in the northwest section of St. Louis. The area it serves is almost entirely lower class Negro. The facility was built in 1937, and contains six hundred and seven beds.

Method

The prime qualification for the cohort was the presence or absence of a criterion series of trauma and other early developmental complications (1). Secondly, the social class background was used; these two factors plus other data constitute the basis for studying development through and after the neonatal period. The criterion series was applied in four of the hospitals to the Obstetric admissions, and to the Pediatric admissions to a lesser extent - for procedural reasons, largely. The flow of patients was scrutinized with the cooperation of the several medical staffs. Babies meeting the criterion series were considered experimental SS, and the next infant seriatim not meeting the criterion was considered a control. In a few instances complications of pregnancy indicated the eventual delivery of a high-risk infant, and his successor at the time of delivery (not meeting the criterion series) was used as a control. The probands were treated as groups and not placed in a matched-pairs arrangement.

During the course of gathering information described elsewhere in detail, (1) The McGuire and White Index of Social Status (2) was applied. Materials on source of income, educational attainment, and occupation were evaluated by the investigator and trained assistants.

## Results

In this report, almost one thousand scores are analyzed (N = 997). Data are presented in Table I and Figure I. Examination of Table I shows that Homer Phillips Hospital contributed almost fifty percent of the cohort, while Jewish Hospital contributed only ten percent. The reason for this is that constant monitoring of the work at the first four hospitals indicated a stronger low SES representation than had been anticipated. Accordingly, Jewish Hospital was approached after one month, and study of their population began after another month. Arraignment of EDAP personnel yielded ninety eight cases at Jewish whose average social status score of 45.58 placed them between the St. Mary's mean of 46.41 and the St. John's mean of 44.06. It was, in any case, lower than the Desloge and Phillips Hospitals means of 59.50 and 67.35. Since a lower McGuire and White score means higher SES status, the effects on the overall sample were salutary.

It will be helpful at this point to consider what McGuire and White scores mean when converted into actual modes of living. Table II shows summary data on three families using actual scores from Table I when possible, close approximations where necessary. It can be seen that SES scores in the seventies indicate most adverse life situations. The means, 44-45-46 indicate that probands are growing up in aspirant families, whose circumstances are generally favorable. The few very low scores - below 25 - illustrate a materially favored way of life in stark contrast to that evident in the lowest

strata of society. Families with high status were not noticeably more cooperative than those with middle status, and decidedly less cooperative than low status families.

Specific Hospitals: 1. St. Mary's Hospital is generally comparable to the other hospitals, with the exception of Homer Phillips. The range of SES scores is wide, ranging from 20 through a mean of 46.41 to a high of 73. The highest social class representation (SES = 20) is clearly professional while the average is lower middle class. The socio-economic indices around 70 are quite low, indicating a clientele of persons from quite impoverished backgrounds. Consideration of Figure 1 shows a platykurtic distribution of one hundred and thirty six scores. The intervals 30-35, 40-45, and 50-55 contain fifty six of the scores, undoubtedly influencing the mean, 46.41. The standard deviation of 13.40 is generally comparable to the rest. The broad-range clientele is largely representative of all five St. Louis hospitals studies.

The St. John's data, based on a large sample (N = 209) is generally similar to the St. Mary's in general statistics (see Table 1). However, examination of Figure 1 shows the distribution is almost tri-modal, and certainly, bimodal, with clear clusters of scores in the intervals 20-35, and 50-65. The obvious implication is that the St. John's clientele is pretty well divided between two groups whose backgrounds are quite diverse. The upper groups in the 25-30 interval, for example, are economically and socially well into the middle class. Interview data provided an interesting flavor to these subjects; few mothers interviewed were college graduates, and their status seemed largely of recent attainment, that is, their aspirant quality was evident. On the other hand, St. John's has a number of clients in the SES score range of 50-60, indicating a style of living rather different from that just mentioned. The presence of these two disparate groups is a commentary on the diverse clientele in hos-

pitals today, and at St. John's in particular.

Firmin Desloge encounters a broad spectrum of social class backgrounds in its clientele. Figure I and Table I show that the range is comparable to that at St. Mary's, although the mean score is higher, indicating skewness in the direction of lower social class representation; the standard deviation is quite low. The Desloge sample of one hundred and thirty cases contained nine scores in the intervals 20-25, and 30-35. These represent the families of physicians in the hospital's teaching program, for the most part. The remainder of the clients are solidly lower middle class.

Homer Phillips hospital clientele may be examined by considering Table I and Figure I. This sample consists of over four hundred cases and is unique in several respects. It is a homogeneous group by social class, and the patients consisting of Negroes with lower class backgrounds. The distribution in Figure I is symmetric and sharply leptokurtic. The distribution and the mean is much lower than the others, being just about half of the standard deviations also given in Table I. There are very few cases, proportionately below the interval 60-65, and there are no scores above the interval 50-55.

The clientele at Jewish Hospital provided data shown in Table I and Figure I. This distribution departs radically from that just described at Homer Phillips. It is very close to being a rectangular distribution, departing sharply from random expectations. In view of the low number of cases (N = 98) the spread of scores is remarkable. The clientele contains approximately equal representation and widely scattered points in the distribution. Many of the cases are indicative of lower class representation to a high degree.

Application of the medians $X^2$ test (3) to the data presented support the observation that the five hospitals treat rather different clienteles. Table III gives a statistical treatment of the data, which is also shown in Figure I. In

Table III are $X^2$ values based on the comparison of median McGuire and White (2) socio-economic scores. For the most part, the values are high and indicate rather different central tendencies in the distributions for given pairs of hospitals. These are to be expected since the hospitals were selected originally in order to obtain a cohort with a variety of ecological characteristics.

Insignificant $X^2$ values are reported for the hospital pairs, Jewish Hospital/St. Mary's, and Jewish Hospital/St. John's. This indicates similarity although the trio are not identical by the Median's test. The pair St. John's/St. Mary's is just significant, according to Table III, at the .05 level. Of course, these comparisons need to be matched by recalling the nature of the distributions by range and kurtosis.

## Summary

The social class scores of nearly one thousand patients in five St. Louis hospitals have been analyzed and compared. The hospitals have generally different clienteles in terms of the range of scores, their central tendencies, and the shape of their distributions of scores.

## Bibliography

1. Jordan, T. E., A Neonatal Cohort: EDAP Technical Report #2, CEMREL, St. Ann, Missouri, 1967.

2. McGuire, D., and White, G. D., The Measurement of Social Status, Res. Paper Hum. Devpm., #3, Univ. of Texas, 1955.

3. Siegel, S., Nonparametric Statistics for the Behavioral Sciences, McGraw Hill, 1956.

TABLE I

SOCIAL CLASS SCORES[1] FROM FIVE ST. LOUIS HOSPITALS (N=997)

| | St. Mary's | St. John's | F. Desloge | H. Phillips | Jewish |
|---|---|---|---|---|---|
| N. | 1386 | 209 | 138 | 416 | 98 |
| Range | 20-73 | 14-76 | 24-84 | 50-84 | 14-73 |
| Mean | 46.44 | 44.06 | 59.50 | 67.35 | 45.58 |
| Standard Deviation | 13.40 | 14.70 | 11.19 | 7.51 | 13.89 |

[1] See McGuire, C., & White, G. D., (2)

TABLE II

FAMILY STYLES ASSOCIATED WITH REPRESENTATIVES S-C-S SCORES

| Score | Parental Education | Occupation | Income Source | Additional Information |
|---|---|---|---|---|
| 20-25 | LL.D. | Attorney | Fees | Family live in superior suburban area. Declined to discuss income, except for source-typical upper class response. Family has four children. |
| 40-45 | two years of college | inspector, electronic production | wages ($8,000 per annum) | Husband attended college at night for two years. Family lives in middle class neighborhood. Two children in family. |
| 70-75 | 11th grade | kitchen worker | wages ($3,200 per annum) | Negro mother aged seventeen. Married father after delivery. Proband is twin who survived recent fire in ghetto home. |

TABLE III

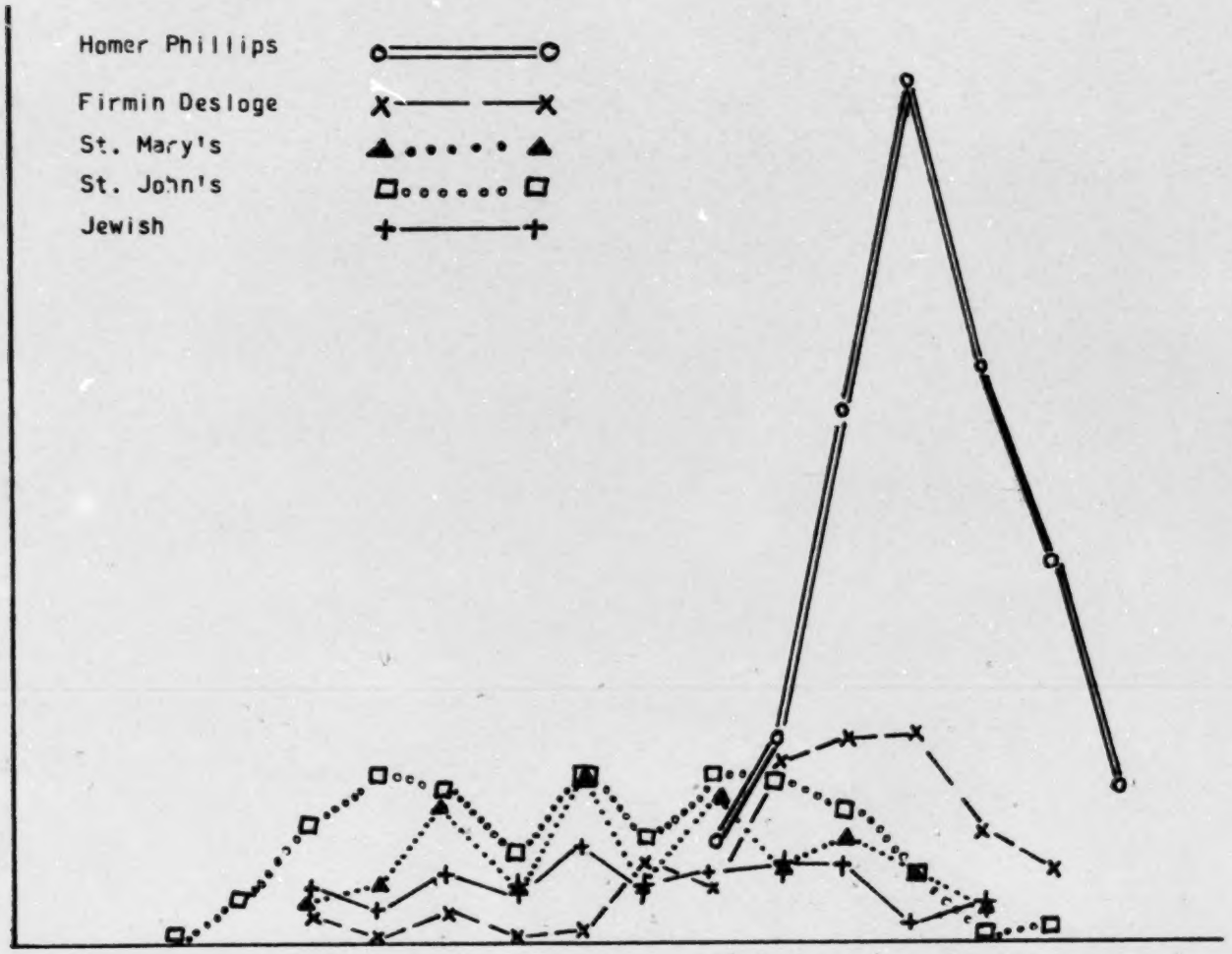
$X^2$ VALUES OF SOCIAL CLASS SCORES BY HOSPITAL

| | H. Phillips | F. Desloge | St. Mary's | St. John's | Jewish |
|---|---|---|---|---|---|
| Phillips | ——— | 16.12** | 206.68** | 3030.30** | 174.20** |
| Desloge | ——— | ——— | 39.95** | 84.33** | 37.64** |
| Mary's | ——— | ——— | ——— | 4.07* | .35 |
| John's | ——— | ——— | ——— | ——— | .68 |
| ish | ——— | ——— | ——— | ——— | ——— |

*$p \leq .05$ for 2-tailed test
**$p \leq .001$ for 2-tailed test

FIGURE I

FREQUENCY OF S.E.S. SCORES IN INTERVALS OF 5 FOR FIVE ST. LOUIS HOSPITALS



DATA BANK INFORMATION BIRTH TO 72 MONTHS OF AGE 1/22/73

**Birth Data**

1. I.D. number - 5 digits
2. Birthdate
3. Birth height
4. Birth weight
5. Tuxford developmental index
6. Ponderal developmental index
7. Low height - low weight
8. Low height - high weight
9. High height - low weight
10. High height - high weight
11. Bio risks
12. Social risk I
13. Social risk II
14. Biosocial risk I
15. Biosocial risk II
16. Apgar rating
17. Control
18. Exper. 1
19. Exper. 2
20. Exper. 3
21. Exper. 4
22. Sex (M = 1)
23. Race (B = 1)
24. SES- 3 factors
25. Marital status (M = 1)
26. Maternal age
27. Maternal $AFI_{65}$
28. Maternal $AFI_{68}$

**6 Month Data**

29. 6 mo. height
30. 6 mo. weight
31. 6 mo. ad hoc devpm.
32. Tuxford Index
33. Ponderal Index
34. Maternal Anxiety (TMAS)

**12 Month Data**

35. 12 mo. height
36. 12 mo. weight
37. 12 mo. ad hoc devpm.
38. Tuxford Index
39. Ponderal Index

**18 Month Data**

40. 18 mo. ad hoc devpm.
41. Slosson raw score
42. Slosson I.Q.

**24 Month Data**

43. 24 mo. height
44. 24 mo. weight
45. Tuxford index
46. Ponderal Index
47. VLDS
48. PAR intellectual
49. PAR total
50. PAR responsibility
51. PAR information
52. PAR ideation

24 Month Data (cont.)

53. PAR creativity
54. Stanford-Binet M.A.

30 Month Data

55. 30 mo. height
56. 30 mo. weight
57. Tuxford index
58. Ponderal index
59. FRPVT
60. Torgoff - f. ach.
61. Torgoff - f. ind.
62. Torgoff - m. ach.
63. Torgoff - m. ind.
64. Quick Test - mother

36 Month Data

65. 36 mo. height
66. 36 mo. weight
67. Tuxford index
68. Ponderal index
69. PPVT raw score
70. PAR communication
71. PAR physical
72. PAR ambulation
73. PAR manipulation
74. 36 mo. testing delay (wks)
75. Number of siblings
76. Birth order
77. Sesame St. viewing (No=1, Some=2, Yes=3)
78. Father figure (father=1, other=2, none=3)

36 Month Data (cont.)

79. Father's occupation code
80. Maternal employment (Full=1, Part=2, Home=3)
81. Maternal education (elem=1, part hi=2, high=3, part coll=4, college=5)
82. FPS-AFI68
83. FPS-CSR
84. FPS-DH
85. FPS-BH
86. FPS-MC
87. Examiner code
88. Informant code (Mom=1, other=0)

42 Month Data

89. 42 mo. height
90. 42 mo. weight
91. Tuxford index
92. Ponderal index
93. PPVT raw score
94. PAR communication
95. PAR physical
96. PAR ambulation
97. PAR manipulation
98. 42 mo. testing delay (wks)
99. Number of siblings
100. Birth order
101. Sesame St. viewing (No=1, Some=2, Yes=3)
102. Father figure (father=1, other=2, none=3)
103. Father's occupation code
104. Maternal employment (Full=1, part=2, Home
105. Maternal education (elem=1, part hi=2, high=3, part coll=4, college=5

42 Month Data (Cont.)

106. FPS - $AFI_{60}$
107. FPS - CSR
108. FPS - DH
109. FPS - BH
110. FPS - MC
111. Examiner code
112. Informant code(Mom=1,other=0)

48 Month Data

113. 48 mo. height
114. 48 mo. weight
115. Tuxford index
116. Ponderal index
117. Copy forms
118. Boehm test
119. Preschool Inventory - total
120. PI - personal-social
121. PI - Assoc. vocabulary
122. PI - concept-numerical
123. PI - concept-sensory
124. VLDS - 48 mo.
125. Quick Test - child
126. 48 mo. testing delay (wks)
127. Visual disability
128. Hearing disability
129. Mentally retarded
130. Experientally deprived
131. Neuro-motor disability
132. Abnormal behavior
133. Speech disability
134. Total disability rating
135. Child development questionnaire
136. Number of siblings
137. Sesame St. viewing(No=1,Some=2,regular=3)
138. Frequency watched (times/wk)
139. Nursery school(no=1,occa=2,regular=3)
140. Type school (day care=1, some ed.=2, formal ed.=3)
141. Frequency attend (1/2 days/wk)
142. Date started (year,month)
143. SES - head of house
144. Head of house code
145. Father figure code
146. SES-mother
147. Year mother born
148. Month mother born
149. Examiner code
150. Informant code

54 Month Data

151. 54 mo. height
152. 54 mo. weight
153. Tuxford index
154. Ponderal index
155. Copy forms
156. Boehm test
157. Preschool Inventory - total
158. PI - personal-social

9. PI - assoc. vocabulary
0. PI - concept-numerical
1. PI - concept-sensory
2. 54 mo. testing delay (wks)
3. Visual disability
4. Hearing disability
5. Mentally retarded
6. Experientially deprived
7. Neuro-motor disability
8. Abnormal behavior
9. Speech disability
0. Total disability rating
1. Child development questionnaire
2. Number of siblings
3. Sesame St. viewing
4. Frequency watched
5. Nursery school
6. Type school
7. Frequency attend
8. Date started
9. SES - head of house
0. Head of house code
1. Father figure code
2. SES-mother
3. Year mother born
4. Month mother born
5. STIM Total
6. STIM Sub.1
7. STIM-sub.2

54 Month Data (Con't)

188. STIM Sub.3
189. STIM Sub 4
190. STIM Sub 5
191. STIM Sub 6
192. STIM Informant code
193. Type dwelling (trailer=1) (apt.=2) (house=3)
194. Number of rooms
195. Examiner code
196. Informant code

60 Month Data

197. 60 mo. height
198. 60 mo. weight
199. Tuxford index
200. Ponderal Index
201. WPPSI vocabulary
202. Digit span test
203. Rescored digit span
204. ITPA auditory association
205. Child Behavior Inventory
206. Child scale informant code
207. Locus of control - internal (A)
208. Locus of control - external (A)
209. Locus of control - internal (B)
210. Locus of control - external (B)
211. Form A completeness index
212. 60 mo. testing delay (wks.)
213 Abnormal test conditions

60 Month Data (Con'd)

4. Visual disability
5. Auditory disability
6. Mentally retarded
7. Experientially deprived
8. Neuro-motor disability
9. Abnormal behavior
20. Speech disability
21. Total disability rating
22. STIM total
23. STIM sub. 1
24. STIM sub. 2
25. STIM sub. 3
26. STIM sub. 4
27. STIM sub. 5
28. STIM sub. 6
29. STIM informant code
30. Number of people in home
31. Number of rooms in home
32. Home density
33. Type dwelling (trailer=1,apt.=2,house=3)
34. Number of siblings
35. Half days of nursery school
36. Type school (day care=1 / some ed.=2 / formal ed.=3)
37. Captain Kangaroo (hrs. watch/wk)
38. Romper Room (hrs. watch/wk)
39. Sesame St. (hrs. watch/wk)
40. Electric Co. (hrs. watch/wk)
41. Mr. Rogers (hrs. watch/wk)

60 Month Data (Cont'd)

242. Other ed. T.V. (hrs. watch/wk)
243. Father present (yes=1)
244. Head of house (father=1,mother=2,other=3)
245. Education of head of house
246. School permission form
247. Examiner code
248. Informant code

66 Month Data

249. 66 month height
250. 66 month weight
251. Tuxford Index
252. Ponderal index
253. WPPSI vocabulary
254. Digit span test
255. Rescored digit span
256. ITPA auditory association
257. Child Behavior Inventory
258. Child scale informant code
259. IAR L of C - internal
260. IAR L of C - external
261. IAR completeness index
262. 66 mo. testing delay (wks)
263. Abnormal test conditions
264. Visual disability
265. Auditory disability
266. Mentally retarded
267. Experientially deprived
268. Neuro-motor disability

. Abnormal behavior
Speech disability
Total disability rating
Parent Attitude Toward Education
PATE scale informant code
Number of people in home
Number of rooms in home
. Home density
. Type of dwelling
. Number of siblings in home
. Half days of nursery school
. Type school
Captain Kangaroo
. Romper Room
. Sesame Street
Electric Company
Mr. Rogers
. Other educational T.V.
. Father present
. Head of house
. Education of head of house
. School permission form
. Examiner code
. Informant code

72 Month Data

. 72 mo. height
. 72 mo. weight
. Head circumference (cm.)
. Pulse per minute

297. Raven's Progressive Matrices
298. Denver Articulation Screening Exam
299. Wepman Auditory Discrimination Test (x)
300. Wepman Auditory Discrimination Test (Y)
301. Anxiety & Defensiveness (A & D) Ques.(A)
302. Anxiety & Defensiveness (A & D) Ques.(D)
303. Anxiety & Defensiveness (A & D) Ques.(Tot)
304. Peabody Picture Vocabulary Test (PPVT)-B
305. Eye Preference (1=left, 2=right)
306. Hand preference (1=left,2=right,0=both)
307. Mixed dominance (0=no, 1=yes)
308. Disability Rating Total
309. Visual disability
310. Auditory disability
311. Mentally retarded
312. Experientially deprived
313. Neuro-motor disability
314. Abnormal behavior
315. Speech disability
316. Abnormal test conditions
317. Parent Attitude Toward Education (PATE)
318. Taylor Manifest Anxiety Scale (Bendig)
319. Life Changes of Children (Coddington)
320. Respondent (1=mom, 2=dad, 3=leg.guard.)
321. Grade in school
322. Kindergarten period (1=AM, 2=PM)
323. influential male
324. Age of influential male
325. Education of influential male

72 Month Data (Cont'd).

. Religion of influential male
. Occupation of influential male
. Income of influential male
. Father's height
. Father's weight
. Influential female
. Age of influential female
. Education of influential female
. Religion of influential female
. Occupation of influential female
. Income of infiuential female
. Number of pregnancies
. Number of children in home
. Mother's height
. Mother's weight
. 72 month testing delay (wks)
. Examiner code
. Informant code
. Child's last name
. Child's first name
. Mother's first name
. Series number

TABLE VII
OCCUPATIONS: LEVELS AND KINDS*

| Rate Professionals | Proprietors | Businessmen | White Collar | Blue Collar | Service | Farm People |
|---|---|---|---|---|---|---|
| 1. Lawyer, judge, physician, engineer, professor, school supt. etal | Large businesses valued at $100,000 or more depending on community | Top executives, President, etal of corporations, banks, public utilities | CPA; editor of newspaper, magazine; executive secy. of status organization | | | Gentlemen farmer or land owners who do not supervise directly their property |
| 2. Nurses, teachers, librarians, and others with 4-yr. college degree | Business valued at $50,000 to $100,000. | Asst., office, & dept. manager or supervisors; some mfg. agents | Accountant; insurance, real estate, stock salesmen; editorial writers | | | Land Operators who supervise properties & have an active urban life. |
| 3. Professionals without 4-yr. college degree | Business or equity valued from $10,000 to $50,000. | Managers of small branches or buyers and salesmen of known mchdse. | Bank clerks, auto salesmen, postal clerks, RR or Tel. agent or supervsr. | Small contractor who works or supervises his jobs. | | Farm owners with "hired help"; operators of leased property who supply |
| 4. | Business or equity valued from $5,000 to $10,000. | (Stenographer, bookkeeper; ticket agent, sales people in dept. stores, et al) | | Foreman; master carpenter, electrician, et al; RR engineer | Police capt. tailor, RR cond., watchmkr. | Small landowners; operators of rented property hiring "hands" |
| 5. | Business or equity valued from $2,000 to $5,000. | (Dime store clerks, grocery clerks; telephone and beauty oper., et al.) | | Apprentice to skilled trades repairmen; med. skilled workers | Policemen; barbers; LVN's, brakemen. | Tenants on good farms; foremen; owners of farms who "hire out" |
| 6. | Business or equity valued at less than $2,000. | | (Semi-skilled factory and production workers; assistants to skilled trade; warehousemen, watchmen) | | Taxi and trk. drivers; waiter, waitress, gas stn. attnt., aides. | Sharecroppers; established farm laborers; subsistence farmers. |
| 7. "Reputed Lawbreakers" | | | (Heavy labor; odd-job men; mine or mill hands, unskilled workers.) | | Domestic hlp. busboy scrubwomen, janitor hlp. | Migrant workers "squatters & nesters" |

For an original table, consult Warner's revised scale (12, pp. 140-141). Modifications in the present table represent revisions made after interviewing in communities and are "types" to guide other rating.

TABLE VIII

(SI) SOURCE OF INCOME

1. Inherited saving and investments; "old money" reputed to provide basic income.
2. Earned wealth; "new money" has provided "transferable" investment income.
3. Profits, fees, royalties, includes executives who receive a "share of profit."
4. Salary, commissions, regular income aid on monthly or yearly basis.
5. Wages on hourly basis; piece-work; weekly checks as distinguished from monthly.
6. Income from "odd jobs" or private relief; "sharecropping" or seasonal work.
7. Public relief or charity; non-respectable incomes (reputation).

*The kind of income appears to be more important that the amount and, in general, the reputed major source of income is symbolic of placement in the community. In the case of a widow, the SI and CC are that of the deceased husband. Investments, insurance, pensions, security benefits, et al are rated by the SI which made them possible unless considerable wealth ("1" and "2") is reputed. Other components correct for seeming discrepancies.

TABLE IX

(ED) EDUCATIONAL ATTAINMENT*

1. Completed appropriate graduate work for a recognized profession at highest level; graduate of a generally recognized, high status, four-year college.
2. Graduate from a four-year college, university, or professional school with a recognized bachelor's degree, including four-year teacher colleges.
3. Attended college or university for two or more years; junior college graduate; teacher education from a normal school; R.N. from a nursing school.
4. Graduate from high school or completed equivalent secondary education; includes various kinds of "post-high" business education or trade school study.
5. Attended high school, completed grade nine, but did not graduate from high school; for persons born prior to 1900, grade eight completed.
6. Completed grade eight but did not attend beyond grade nine; for persons born prior to 1900, grades four to seven would be equivalent.
7. Left elementary or junior high school before completing grade eight; for persons born prior to 1900, no education or attendance to grade three.

*Actual education attained probably is not as important as the education a person is reputed to have. The same scale is used to rate aspiration.

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# APPENDIX B

The materials included in this Appendix were taken from Social Class Configurations of Early Childhood Socialization, a report of this project dated December, 1974. They were not integrated into the main body of the text as they refer to subgroups defined on a basis different from that used in the main part of this report.

Internal references in this Appendix refer to other documents within it. This holds for tables and for supporting documentation.

In the St. Louis Study, maternal attitudes towards various socialization-relevant issues were assessed at several time points. Our data file includes assessments of such attitudes accomplished by means of Ernhart and Loevinger's Authoritarian Family Ideology scale (1969) which is a rather extensive family-focussed version of the original Authoritarian Personality scale (Adorno et al., 1950). The scale was administered to the mothers at two time points: at birth of the child and when the child was three (Cohort I) or three and one-half (Cohort II) years of age (see Figure 1).

We subdivided the 1968 version of Ernhart and Loevinger's scale, which has forty-one items, into small subscales of high homogeneity which focuss on specific issues in child rearing (see Harnischfeger & Wiley, 1973). Our intent is to analyze maternal attitudes in as much detail as possible and to follow possible changes over time. We shall exemplify this with three subscales: Sex Roles, Dependence, and Punitiveness.

-- Mother's view of sex roles is assessed by four items which address the differentiation of male and female roles with respect to clothing, general behavior, and dating.

-- Mother's attitude toward dependence, assessed by three items, addresses the child's need for having privacy, time and money for himself.

-- Mother's punitiveness is assessed by four items and covers punishment of children for naughty words, lying, striking a younger child, and the duration of punishment.

Item options (see below ) espousing the more conservative or rigid position, i.e., greater sex role differentiation, dependence, or punitiveness, were always coded "2" as compared to "1" for the alternative side.

We compared these assessments of maternal attitudes among different subgroups for the time when the criterion child was born and then followed the attitude changes which had occurred over three or three and one-half

years. Initially, we created subgroups along lines which we felt were most salient to attitude differences: race and varying levels of education. Consequently, we created eighteen groups based on kinds of groupings of the sample: paternal education and presence, maternal education, race. The first had three subdivisions: father absent, father present having education beyond high school, father present having no education beyond high school. Maternal education also had three levels: less than high school, high school graduate, more than high school.

Analysis of differences in maternal attitudes among these subgroups revealed some striking findings (Tables 13, 14, and 15). First, Blacks had consistently more traditional attitudes than Whites on all three scales, sex roles, dependence, and punitiveness. Second, there were no detectable differences in maternal attitudes among any of the Black subgroups. This finding may be due in part to the small sample size -- since we required data from two time points, three years apart, Black attrition was especially severe. However, it is obvious that any possible differences among the Black subgroups must be much smaller than those among Whites.

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Insert Tables 13, 14, and 15 about here

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Neither within the Black nor the White groups was there any difference among mothers with varying amounts of education, when the father's absence or education was accounted for.White mothers' attitudes differed, however, markedly when we grouped them acccording to their husbands' educational levels. The wives of less educated husbands ( $\leq$ high school; n = 100) showed considerably more traditional views on all three scales than the wives of husbands (n = 103) who have attended college.

In summary, we found -- surprisingly -- no differences in sex role, dependence, and punitive attitudes among mothers of varying educational levels within the

racial groups. However, Black and White mothers have distinct views in that Black mothers, in general, emphasize sex role differences and dependence of children and seem to be more strict in their punishment. Their attitudes seem not to vary with their spousal circumstances, as we do not see attitudinal differences between families with and without fathers or between fathers' educational levels.

In contrast, White mothers seem to differ according to their husbands' education. The higher a husband's educational level, the less emphasis a mother places on sex role differentiation and punitiveness, and the more she favors independence of her child(ren). Although White mothers with husbands who have no education beyond high school have more conservative views, they are still markedly less strict than Black mothers.

The mothers'attitudinal differences among the races and the White fathers' educational levels loosely resemble our earlier social class groupings, although we followed here an independent strategy. There is the group of Black lower class, being the most conservative in the assessed attitudes, followed by the White lower and lower middle class group; and at the other end, we find similar attitudes among mothers in the White upper middle class. Although the dividing lines among the White groups is slightly different than before, these findings encourage further research with focus on social classes.

Our intent in analyzing attitude change in these three distinct groups is to diagnose possible differences in family social environments. If the groups differ markedly in the degree to which attitudes change over the three to three and one-half year period, then one might infer marked differences in the family environments in the various groups over this period. Problems are created, however, in the comparison of attitude changes between groups because of initial differences in those attitudes. Since changes in attitudes generally vary systematically depending on initial status, this depending

must be taken into account if we are to separate group differences in those aspects of change which are due to prior experiences of individuals from group differences in contemporary experiences. In order to do this, we must first characterize the dependence of posterior on initial attitudes. An appropriate methodology for assessing such dependence is regression analysis.

With respect to sex role attitudes, the slopes of the lines relating attitudes at the later time to initial attitudes are 0.30, 0.52, and 0.47 for Black mothers, White mothers with less educated husbands, and White mothers with more highly educated husbands, respectively (Table 13). These coefficients do not appear to differ -- except by chance -- and our best assessment of a common value is 0.48 (Table 16).

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Insert Table 16 about here

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Real differences among the slopes, over the three groups, with respect to Dependence are also not detectable (pooled value: 0.43; Table 14).

When we compare the slopes for punitive attitudes, however, we find large discrepancies: 0.23 (Blacks), 0.53 (Whites $\leq$ high school), and 1.07 (Whites $>$ high school) (Table 15). These differences are not attributable to chance ($p << 0.001$; Table 16). This heterogeneitiy among the coefficients complicates groups comparisons, and although the differences in relationship across the groups are both striking and substantively interesting, we will postpone further analysis of punitive attitudes to a subsequent paper.

Since the regression slopes are homogeneous across the three groups for the sex role attitdues scale, a decomposition of the changes in attitudes and the differences in those changes between the groups is possible and desirable. The amount of change in attitude is generally dependent on the initial level so that comparisons among groups are meaningful only when those levels are

taken into account. Accordingly, we break down the average change value in each group into two parts: that expected from the initial level and that part which is independent of this level. Both parts are characteristic of the groups concerned, but the former is a result of pre-existing differences in the attitude under study, while the latter is a result of consistent group differences in the social processes occuring between the measurement times. Thus, these "adjusted" changes, or more properly their group differences, can be used to signal or diagnose contemporary differences in groups' social processes and structures as those differences bear on changes in maternal attitudes. A detailed discussion of this problem, including quantitative strategies appropriate to data analyses may be found in Wiley and Harnischfeger (1973, revised 1974). The data analyses, reported here, follow this strategy (see also Table A5.).

If we dissect the change in sex role attitudes according to that logic, we gain insight into the impacts of the environments, individuals in the different groups are living in. Assuming that the three groups -- Black lower class, White lower and lower middle class, and White upper middle class -- each had a stable environment before and after their attitudes were first assessed, we expect distinct attitude differences between groups at the two time points of assessment. We anticipate these discrepancies because the groups have different initial attitudes. Since there is a relationship between earlier attitudes and expected attitude change, we must predict the groups to change by different amounts, even when their environments are stable.

Using the regression coefficient to quantify change for the specific groups, we expect somewhat different discrepancies for the various pairs of groups, 0.582 for lower and lower middle class Whites versus Blacks and 0.493 for lower and lower middle class Whites versus upper middle class Whites (Table 17). This follows, since the initial difference between lower and lower middle class Whites and the Blacks (-1.120) was slightly greater than that between lower and lower middle and upper middle class Whites (-0.948).

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Insert Table 17 about here

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However, the actual differences among those social class groups are considerably greater. They amount for White lower and lower middle class versus Blacks to 0.015 and for White lower and lower middle versus upper middle class to 0.277. The residuals of -0.567 and -0.216,respectively, indicate that the change in mothers' sex role attitudes, that occurred between the time the criterion child was born and the time the child was three or three and one-half year old, is partially due to contemporaneous environmental effects. These characteristic environmental influences are not related to the initial maternal sex role attitudes. The comparisons of change between the social class groups indicate that influences of the environment in the direction of more traditional sex role attitudes was most strong for Black mothers, less strong for White lower and lower middle class mothers, and weakest for White upper middle class mothers. The clearest finding is the marked discrepancy between Blacks and Whites, while the difference between the White groups may be due to chance.

Following a similar analysis for Dependence (Table 18), we conclude that the findings are consistent with similarities in Dependence-relevant environmental stability over the groups.

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Insert Table 18 about here

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6. Changes in Children's Vocabulary

The Peabody Picture Vocabulary Test (Dunn, 1965) was given to the criterion children at three and six years (Cohort I) or three and one-half and six and one-half years (Cohort II) of age. This test is rapidly administered and requires only verbal responses to pictorial vocabulary stimuli. In our use of

the scores, we treat the measure as an index of vocabulary knowledge rather than as an ability measure and thus use raw scores instead of derived scores such as deviation IQ's.

In the preliminary analyses reported here, we followed the strategy of environmental diagnosis used in Section 5. We subdivided the cases with data available at both time points into two groups: Blacks ( n = 155) and Whites ( n = 286). The results are summarized in Table 19. Whites' average vocabulary score exceeded that of Blacks by more than ten score points at the first testing. Although Whites gained less than Blacks over the three-year test interval, they, on the average, still exceed the Blacks by almost seven points at the time of school entry.

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Insert Table 19 about here

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When we followed the adjustment strategy of Section 5, we found the Blacks still fell short of the Whites by almost three points, indicating that during the three-year period preceding the second testing, White cognitive environments were more conducive to vocabulary building than Black environments.

Table 13. Longitudinal Analysis of Changes in Maternal Sex Role Attitudes for Each Subgrouping

| | Blacks | Whites ≤ HS | Whites > HS |
|---|---|---|---|
| n | 40 | 100 | 103 |
| Means: | | | |
| Time 1 | 7.65 | 6.53 | 5.58 |
| Time 2 | 7.48 | 6.37 | 5.70 |
| Variances & Covariance: | | | |
| Time 1 | 0.305 | 1.024 | 0.785 |
| Time 2 | 0.484 | 1.053 | 0.889 |
| Time 1--2 | 0.093 | 0.533 | 0.365 |
| Regression Analysis: | | | |
| Correlation | 0.241 | 0.513 | 0.437 |
| Slope | 0.304 | 0.520 | 0.465 |
| Intercept | 5.148 | 2.971 | 3.102 |
| Residual Variance | 0.456 | 0.776 | 0.719 |
| Variance of Est. Slope | 0.0482 | 0.0078 | 0.0092 |
| Standard Error of Slope | 0.220 | 0.088 | 0.096 |
| Degrees of Freedom of Residual Variance: | 31 | 97 | 100 |

Table 14. Longitudinal Analysis of Changes in Maternal Attitudes Toward Dependence for Each Subgrouping

| | Blacks | Whites ≤ HS | Whites > HS |
|---|---|---|---|
| n | 40 | 100 | 103 |
| Means: | | | |
| Time 1 | 5.28 | 4.85 | 4.16 |
| Time 2 | 5.08 | 4.69 | 4.09 |
| Variances & Covariance: | | | |
| Time 1 | 0.507 | 0.687 | 0.716 |
| Time 2 | 0.720 | 0.708 | 0.656 |
| Time 1--2 | 0.243 | 0.344 | 0.250 |
| Regression Analysis: | | | |
| Correlation | 0.402 | 0.493 | 0.364 |
| Slope | 0.478 | 0.500 | 0.349 |
| Intercept | 2.552 | 2.263 | 2.635 |
| Residual Variance | 0.604 | 0.536 | 0.569 |
| Variance of Est. Slope | 0.0384 | 0.0080 | 0.0080 |
| Standard Error of Slope | 0.196 | 0.090 | 0.089 |
| Degrees of Freedom of Residual Variance: | 31 | 97 | 100 |

Table 15. Longitudinal Analysis of Changes in Maternal Punitive Attitudes for Each Subgrouping

| | Blacks | Whites ≤ HS | Whites > HS |
|---|---|---|---|
| n | 40 | 100 | 103 |
| Means: | | | |
| Time 1 | 7.08 | 6.34 | 5.85 |
| Time 2 | 6.92 | 6.10 | 5.47 |
| Variances & Covariance: | | | |
| Time 1 | 0.670 | 0.994 | 0.584 |
| Time 2 | 0.288 | 1.182 | 1.161 |
| Time 1--2 | 0.151 | 0.529 | 0.627 |
| Regression Analysis: | | | |
| Correlation | 0.344 | 0.488 | 0.762 |
| Slope | 0.226 | 0.533 | 1.074 |
| Intercept | 5.327 | 2.722 | -0.819 |
| Residual Variance | 0.254 | 0.900 | 0.487 |
| Variance of Est. Slope | 0.0122 | 0.0093 | 0.0083 |
| Standard Error of Slope | 0.111 | 0.097 | 0.091 |
| Degrees of Freedom of Residual Variance: | 31 | 97 | 100 |

Table 16. Comparison of Regression Coefficients Among Subgroupings*

| | Sex Roles | Dependence | Punitiveness |
|---|---|---|---|
| Regression Coefficients: | | | |
| Blacks | 0.304 | 0.478 | 0.226 |
| Whites ≤ High School | 0.520 | 0.500 | 0.533 |
| Whites > High School | 0.465 | 0.349 | 1.074 |
| Weights for Optimally Combining Coefficients: | | | |
| Blacks | 0.080 | 0.094 | 0.265 |
| Whites ≤ High School | 0.496 | 0.450 | 0.347 |
| Whites > High School | 0.423 | 0.455 | 0.388 |
| Pooled Coefficient: | 0.480 | 0.429 | 0.662 |
| Standard Error of Pooled Coefficient: | 0.062 | 0.060 | |
| $\chi^2$ Test of Homogeneity of Regression (df 2): | 1.16 | 2.71 | 57.13 |

* The theory used to derive the procedures applied here is for large samples and does not depend on assumptions concerning homogeneity of residual variance. Weights for linear pooling were determined using the estimated variances of the slopes in each sample and the $\chi^2$ statistic was produced by summing the squares of the differences between pooled and group coefficients after dividing by the appropriate standard errors.

Table 17. Longitudinal Comparison of Changes in Sex Role Attitudes Across Three Subgroupings

| | Pre-Score | Posterior Score | Gain |
|---|---|---|---|
| Subgroupings: | | | |
| White ( >HS) | | | |
| Total | 5.582 | 5.699 | 0.117 |
| Mediated | | 2.678 | -2.904 |
| Unmediated | | 3.021 | 3.021 |
| White ( ⩽HS) | | | |
| Total | 6.530 | 6.370 | -0.160 |
| Mediated | | 3.132 | -3.398 |
| Unmediated | | 3.238 | 3.238 |
| Black | | | |
| Total | 7.650 | 7.475 | -0.175 |
| Mediated | | 3.670 | -3.980 |
| Unmediated | | 3.805 | 3.805 |
| Contrasts: | | | |
| White ( >HS) vs. White ( ⩽HS) | | | |
| Total | -0.948 | -0.671 | 0.277 |
| Mediated | | -0.455 | 0.493* |
| Unmediated | | -0.216 | -0.216* |
| White ( ⩽HS) vs. Black | | | |
| Total | -1.120 | -1.105 | 0.015 |
| Mediated | | -0.538 | 0.582* |
| Unmediated | | -0.567 | -0.567* |

* Standard error of 0.18.

Table 18. Comparison of Change in Attitudes Toward Dependence Across Three Subgroupings

| | Pre-Score | Posterior Score | Gain |
|---|---|---|---|
| **Subgroupings:** | | | |
| White ( >HS) | | | |
| Total | 4.165 | 4.087 | -0.078 |
| Mediated | | 1.788 | -2.377 |
| Unmediated | | 2.299 | 2.299 |
| White ( ≤HS) | | | |
| Total | 4.850 | 4.690 | -0.160 |
| Mediated | | 2.082 | -2.768 |
| Unmediated | | 2.608 | 2.608 |
| Black | | | |
| Total | 5.275 | 5.075 | -0.200 |
| Mediated | | 2.264 | -3.011 |
| Unmediated | | 2.811 | 2.811 |
| **Contrasts:** | | | |
| White ( >HS) vs. White ( ≤HS) | | | |
| Total | -0.685 | -0.603 | 0.082 |
| Mediated | | -0.294 | 0.391* |
| Unmediated | | -0.309 | -0.309 |
| White ( ≤HS) vs. Black | | | |
| Total | -0.425 | -0.385 | 0.040 |
| Mediated | | -0.182 | 0.243** |
| Unmediated | | -0.203 | -0.203 |

* Standard error of 0.18.

** Standard error of 0.15.

Table 19. Longitudinal Analyses of Changes in Children's Vocabulary

| | Black | | White |
|---|---|---|---|
| n | 155 | | 283 |
| Means: | | | |
| Time 1 | 21.22 | | 31.98 |
| Time 2 | 52.54 | | 59.32 |
| Variances & Covariance: | | | |
| Time 1 | 60.49 | | 145.12 |
| Time 2 | 58.21 | | 53.97 |
| Time 1--2 | 20.92 | | 52.00 |
| Degrees of Freedom: | 149 | | 278 |
| Slope: | 0.346 | | 0.358 |
| Residual Variance: | 50.97 | | 35.34 |
| Var $(\hat{\beta})$: | 0.00566 | | 0.00088 |
| Standard Error $(\hat{\beta})$: | 0.0752 | | 0.0296 |
| Weight: | 0.134 | | 0.866 |
| Pooled Slope: | | 0.357 | |
| Variance of Pooled Slope: | | 0.000758 | |
| Standard Error of Pooled Slope: | | 0.0275 | |
| Raw Change: | 31.32 | | 27.35 |
| Mediated Change: | -13.65 | | -20.57 |
| Unmediated (Adjusted) Change: | 44.97 | | 47.92 |
| Contrast (White vs. Black): | | 2.945 | |
| Standard Error of Contrast: | | 1.154 | |

Maternal Attitudes (Items from Ernhart & Loevinger's scale, 1969.)

1. Mother's View of Sex Roles:

A little girl should wear dresses instead of overalls. (Coded: 2)

Overalls are often the most practical thing for a little girl to wear. (Coded: 1)

If a little girl is a tomboy, her mother should try to get her interested in dolls and playing house. (Coded: 2)

If a little girl is a tomboy, her mother should let her play boys' games. (Coded: 1)

Boys like to date "fast" girls, but when it comes to getting married, they choose girls for whom they have more respect. (Coded: 2)

Most boys marry the same kind of girl they have been going out with. (Coded: 1)

A woman should never be alone on the streets at night. (Coded: 2)

It is silly for a woman to worry about coming home alone at night. (Coded: 1)

2. Mother's Attitude Toward Dependence:

A child of 8 should tell his parents how he spends his money. (Coded: 2)

A child of 8 should have a little money to spend without telling his parents. (Coded: 1)

The best kind of family life is the kind where the whole family does everything together. (Coded: 2)

Everyone, even a child, needs some privacy in his life. (Coded: 1)

Children should make good use of their time after school and during vacations. (Coded: 2)

Nowadays what most children need is more time to themselves, even if they waste time. (Coded: 1)

3. Mother's Attitude Toward Punitiveness:

Parents hould punish small children when they use naughty words. (Coded: 2)

Parents should not pay any attention when small children use naughty words. (Coded: 1)

If a boy of 6 or 7 lies or steals, he should be punished severely. (Coded: 2)

Lying and stealing aren't very serious in boys 6 or 7. (Coded: 1)

Punitiveness continued...

If an older child strikes a younger one, he should always be punished. (Coded: 2)

If an older child strikes a younger one, he may have a good reason for it. (Coded: 1)

Punishing a child doesn't do any good if you make up to him right afterwards. (Coded: 2)

It is best to make up with a child right after punishing him. (Coded: 1)

Table A5. Estimated Variance-Covariance Matrix of Adjusted Means

Variances and Covariances of Adjusted Means:*

1. $\text{Var}\ (\hat{\alpha}_i) = \left[(\beta^2+1)\sigma^2_{y_1}(i) + 2\beta\sigma_{y_1(i)y_2(i)}\right]/n_i + (\mu_1^{(i)})^2\sigma^2_{\hat{\beta}}$

2. $\text{Cov}\ (\hat{\alpha}_i,\hat{\alpha}_i) = \mu_1^{(i)}\ \mu_1^{(i)}\ \sigma^2_{\hat{\beta}}$

A. Sex Role Attitudes:

$$\begin{array}{c} \\ \hat{\alpha}_1 \\ \hat{\alpha}_2 \\ \hat{\alpha}_3 \end{array}\begin{bmatrix} 0.2385 & & \\ 0.1937 & 0.1831 & \\ 0.1656 & 0.1414 & 0.1336 \end{bmatrix}$$

$\text{Var}\ (\hat{\alpha}_1 - \hat{\alpha}_2) = 0.2385 + 0.1831 - 2(0.1937) = 0.0342$

$\text{SE}\ \ (\hat{\alpha}_1 - \hat{\alpha}_2) = 0.1849$

$\text{Var}\ (\hat{\alpha}_2 - \hat{\alpha}_3) = 0.0339$

$\text{SE}\ \ (\hat{\alpha}_2 - \hat{\alpha}_3) = 0.1841$

B. Dependence:

$$\begin{array}{c} \\ \hat{\alpha}_1 \\ \hat{\alpha}_2 \\ \hat{\alpha}_3 \end{array}\begin{bmatrix} 0.1210 & & \\ 0.0927 & 0.0963 & \\ 0.0796 & 0.0732 & 0.0732 \end{bmatrix}$$

$\text{Var}\ (\hat{\alpha}_1 - \hat{\alpha}_2) = 0.0319$ $\qquad$ $\text{SE}\ \ (\hat{\alpha}_1 - \hat{\alpha}_2) = 0.1786$

$\text{Var}\ (\hat{\alpha}_2 - \hat{\alpha}_3) = 0.0231$ $\qquad$ $\text{SE}\ \ (\hat{\alpha}_2 - \hat{\alpha}_3) = 0.1520$

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* The formulas are derived from the general large sample distribution theory of non-linear transformations (See, e.g., Rao, C.R., Linear Statistical Inference and Its Applications. New York: Wiley, 1965. Chapter 6.